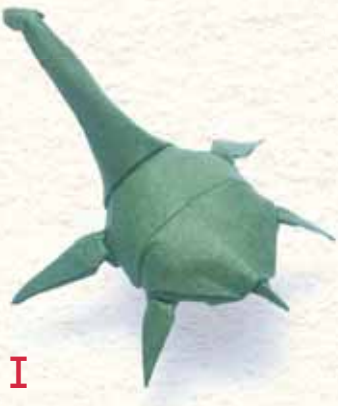
FANTASTIC ORIGAMI SEA CREATURES

20 INCREDIBLE PAPER MODELS



HISAO FUKUI

TUTTLE

In this book, famous Japanese origami designer HISAO FUKUI shows you how to fold 20 incredibly realistic and dramatic models including marine mammals, fish, crustaceans, swimming dinosaurs—even a serenely floating Jellyfish! The easy-to-follow instructions enable you to create paper models ranging in difficulty from intermediate to complex.

Here are some of the unique models you can fold with the instructions in this book:

- **Blue Whale Calf**—A majestic mammal that was only recently rescued from the brink of extinction
- **Penguin**—This cute model captures the awkward appearance of this flightless aquatic bird
- **Polar Bear**—A menacing hunter who will hungrily stalk the edge of your desk or bookshelf!
- **Goldfish**—This model features elegant lines and clever folding solutions—and looks fabulous!
- **Crocodile**—The broad back of this lurking hunter makes it ideal for specialty handmade papers.
- **Crab**—This model is challenging, with all its legs, but has fewer pinch folds than you might expect!
- **Manta Ray**—Graceful sweeping wings provide the opportunity to create a truly expressive sculpture!
- **And many more!**

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FANTASTIC ORIGAMI SEA CREATURES

20 INCREDIBLE PAPER MODELS

HISAO FUKUI

TUTTLE Publishing
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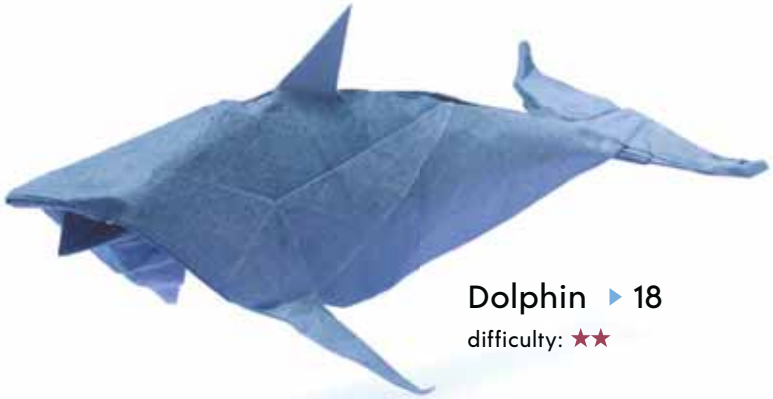
PART 1: AQUATIC BIRDS & MAMMALS

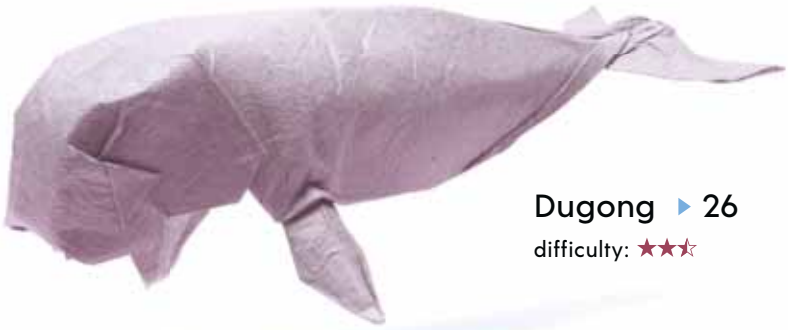
Introduction 6
A Guide to the Folding Symbols 7
Specialized Folding Procedures 8
Origami Bases 10
How to Make Lifelike Origami 12
About the Paper 13

Penguin ▸ 14
difficulty: ★★☆



Dolphin ▸ 18
difficulty: ★★

Blue Whale Calf ▸ 22
difficulty: ★★



Dugong ▸ 26
difficulty: ★★½

Polar Bear ▸ 31
difficulty: ★★½

Walrus ▸ 36
difficulty: ★★★½

PART 2: SALTWATER FISH

Manta Ray ▸ 42
difficulty: ★½

Swordfish ▸ 46
difficulty: ★★

Seahorse ▸ 50
difficulty: ★★★

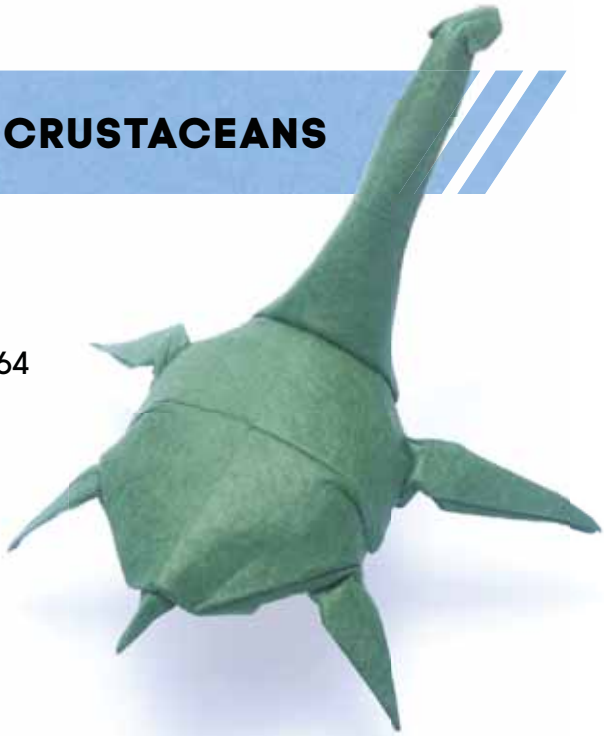
PART 3: FRESHWATER CREATURES

Goldfish ▸ 54
difficulty: ★★

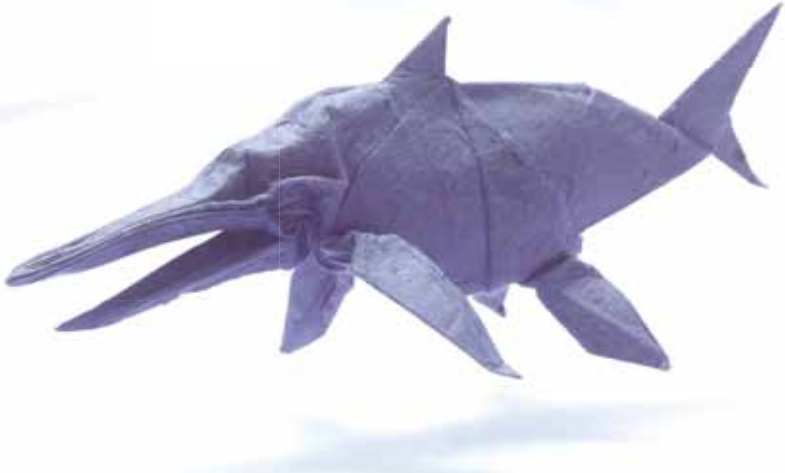
Crocodile ▸ 58
difficulty: ★★★★½

PART 4: PREHISTORIC CREATURES & CRUSTACEANS

Elasmosaurus ▸ 64
difficulty: ★★★½



Spinosaurus ▸ 70
difficulty: ★★★★



Ichthyosaurus ▸ 76
difficulty: ★★★★

Crab ▸ 82
difficulty: ★★★★

Marine Isopod ▸ 88
difficulty: ★★★★½

PART 5: AQUATIC INVERTEBRATES

Squid ▸ 94
difficulty: ★★½

Octopus ▸ 98
difficulty: ★★½

Giant Squid ▸ 101
difficulty: ★★★

Jellyfish ▸ 107
difficulty: ★★★★★

WHY I WROTE THIS BOOK

I decided to publish *Fantastic Origami Sea Creatures* in response to demand from readers who've enjoyed my other origami animal books. The strong positive reaction confirmed that interest in lifelike origami models is deep and wide, and I'm grateful for the support of all my readers!

This book presents a broad range of creatures that live in and around the water (saltwater and fresh), but I also have other books in Japanese that focus primarily on land animals, as well as a book on flying creatures (*Fantastic Origami Sea Creatures*), which was recently published in English by Tuttle Publishing.

Folding lifelike origami models is an art. The paper must be folded many times and in surprising ways to create a figure that closely resembles the look of animals, dinosaurs, insects, and so on.

Although folding these lifelike forms may seem daunting at first glance, each model begins with a stage called "basic folds,"* which simplifies the operation. After the basic folding is complete, I provide step-by-step instructions on how to produce more realistic and complex forms. The basic folds itself can be time-consuming, but it's usually not difficult—people of practically any age or skill level can accomplish it. After completing the basic folds stage, you don't necessarily need to follow the rest of the steps exactly as specified. You can change small details such as the shape of the wings, position of the head, etc. to taste to make your origami unique.

What sets lifelike origami apart from other simpler forms is that the finished products are three-dimensional and have many curved surfaces. You will often need to gently shape the model as a finishing touch to make the origami look just right. Sometimes, it may even take a few days to make small adjustments. Use the photos in this book as a reference for your adjustments. I recommend applying glue to your models so they hold their shape over long periods. See page 12 for details. I recommend the challenge of using glue to anyone who is beyond the beginner level. However, first-time folders are welcome to try it as well. I recommend practicing by folding the entire model at least one time before deciding to try one with glue applied—once the glue sets, there's no going back to fix earlier mistakes!

Generally speaking, Japanese paper (*washi*) will produce the best results for the models described in this book. It is pliable, natural-feeling, not prone to tearing, and it takes well to being moistened or glued. But in certain instances, commercially available origami paper (*kami*) is preferable—particularly for use when practicing. When using this sort of paper, I recommend using the thinnest paper you can find.

The models in this book range from relatively easy to quite challenging in terms of difficulty. To assist beginners, I've included detailed views for the more difficult procedures. If a given step seems confusing, look ahead to the next diagram for hints.

I hope you enjoy *Fantastic Origami Sea Creatures*!

—Hisao Fukui

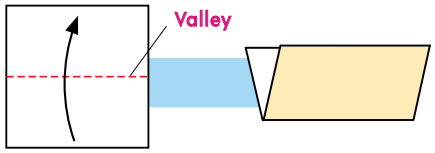
Note

*Basic Folds: In this book, each model has a stage called "basic folds." In this stage, you should follow the instructions exactly. However, after this stage is complete, feel free to make minor adjustments, such as slightly adjusting folding angles and distances depending on your taste. The variations in the shape of the final product is part of the charm of lifelike origami.

A GUIDE TO THE FOLDING SYMBOLS

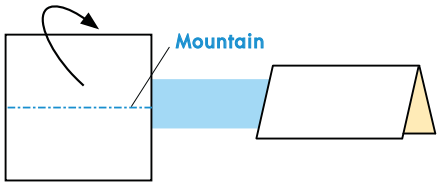
Fold inward along the line: valley fold

The line ends up on the inside of the fold, thus it's also called a "valley line."
In the diagrams, I denote these lines as "valley."



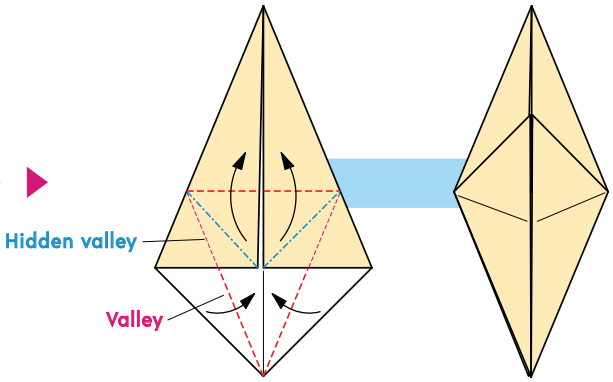
Fold outward along the line: mountain fold

The line ends up on the outside of the fold, thus it's also called a "mountain line." The same result can be achieved by making a valley fold on the opposite side.
In the diagrams, I denote these lines as "mountain."



Inward hidden fold: hidden valley fold

A valley fold hidden under the paper. It is denoted in the diagrams as "hidden valley."

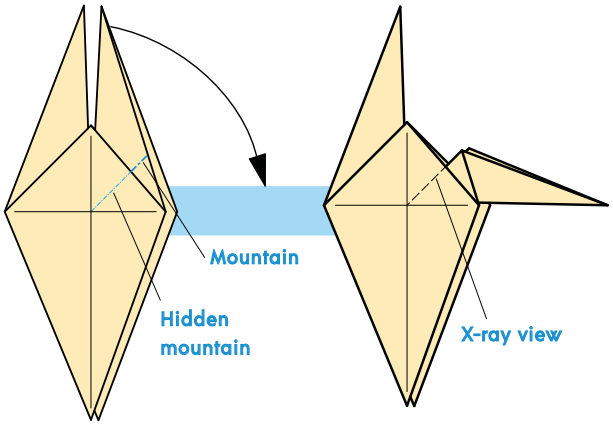


Outward hidden fold: hidden mountain fold

A mountain fold in which a part is hidden under a fold. It is denoted in the diagrams as "hidden mountain."

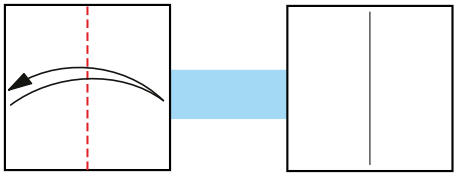
Position of the hidden part: x-ray view

This line shows the position of an inner part hidden by other layers.



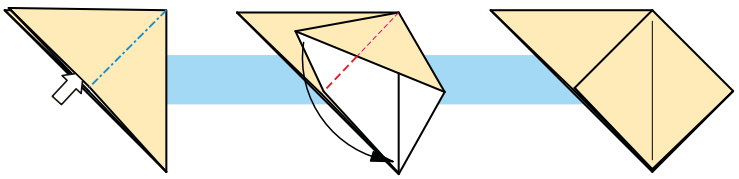
Fold and unfold

Fold along the line and return, leaving a crease.



Squash fold

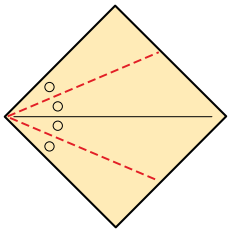
Spread from the space indicated by the arrow and fold again.



Pull out the paper

Pull and spread the paper

Divide the paper equally

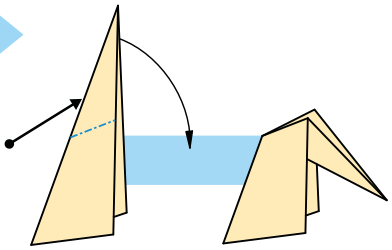


Turn the paper over

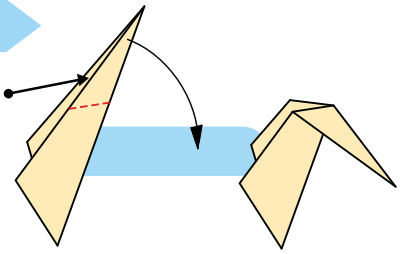
Zoom in

SPECIALIZED FOLDING PROCEDURES

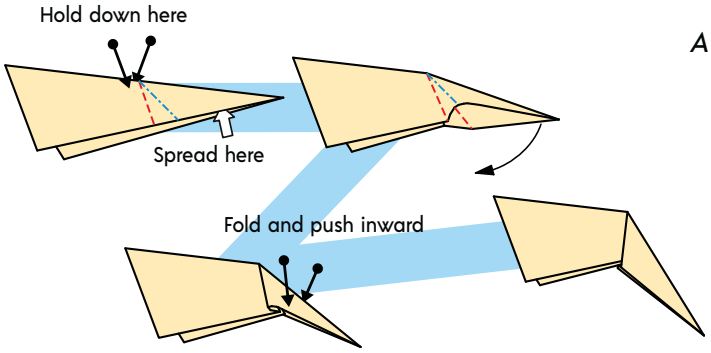
Inside reverse fold



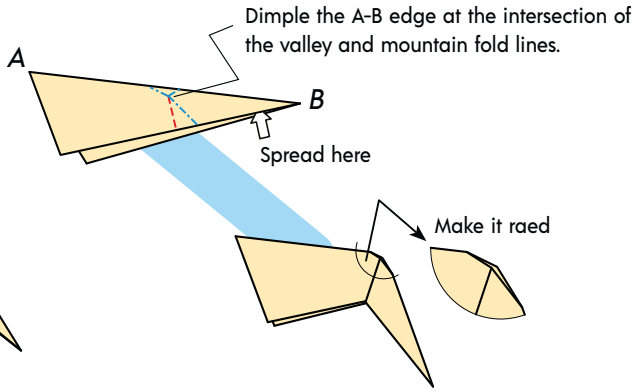
Outside reverse fold



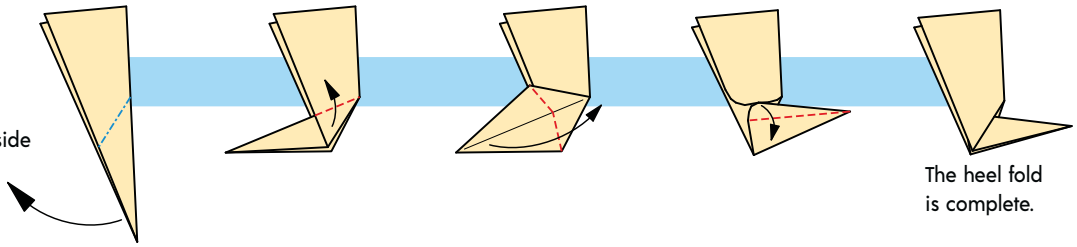
Crimp fold



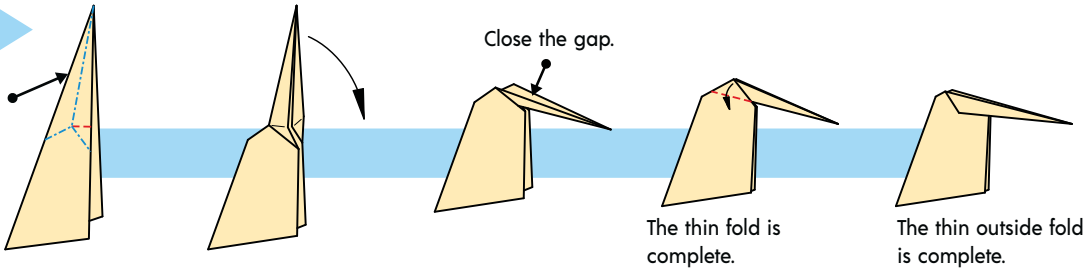
Three-dimensional crimp fold



Heel fold

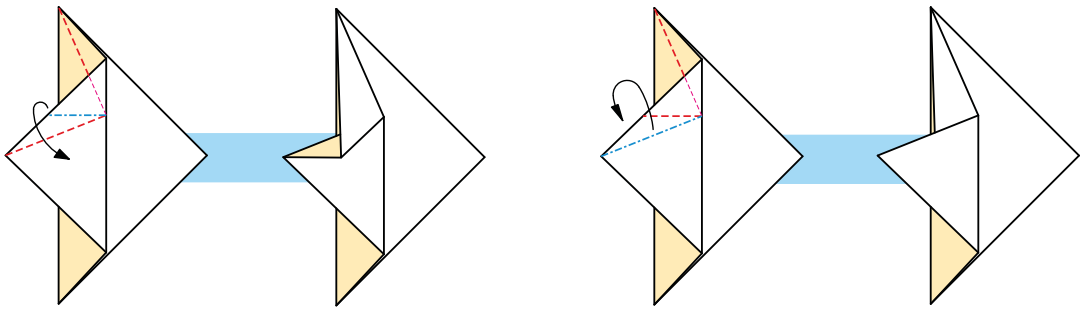


Thin fold / thin outside fold



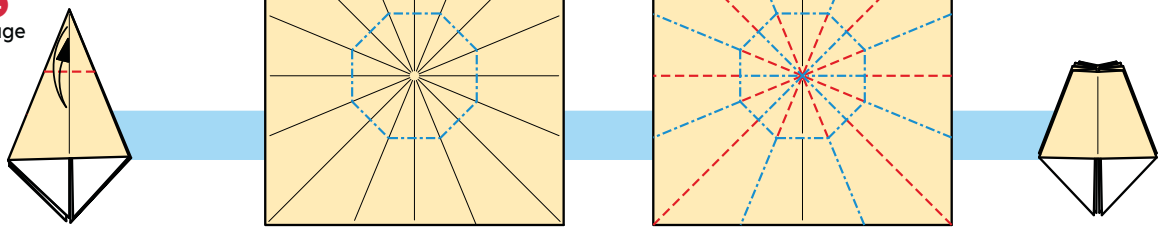
Swivel fold

The shape changes depending on the direction of the fold, but they are both referred to as "swivel folds."



Sink fold

Fold through step 4 of the Frog Base (page 10) for this example.



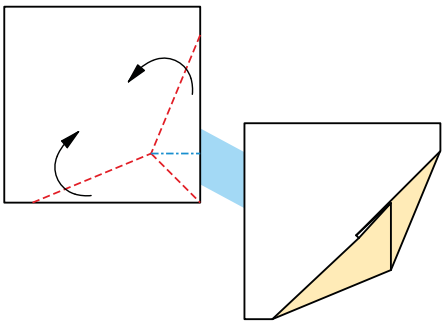
Crease the top point in half sharply and then open up the paper completely.

Re-form the folds at the center into mountain fold lines.

Refold the Frog Base folds while inverting the center section.

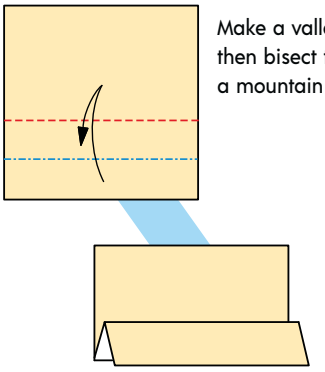
This completes the sink fold.

Rabbit ear



The rabbit ear fold is complete.

Pleat fold

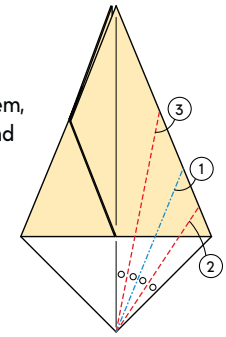


Make a valley fold, and then bisect the flap with a mountain fold.

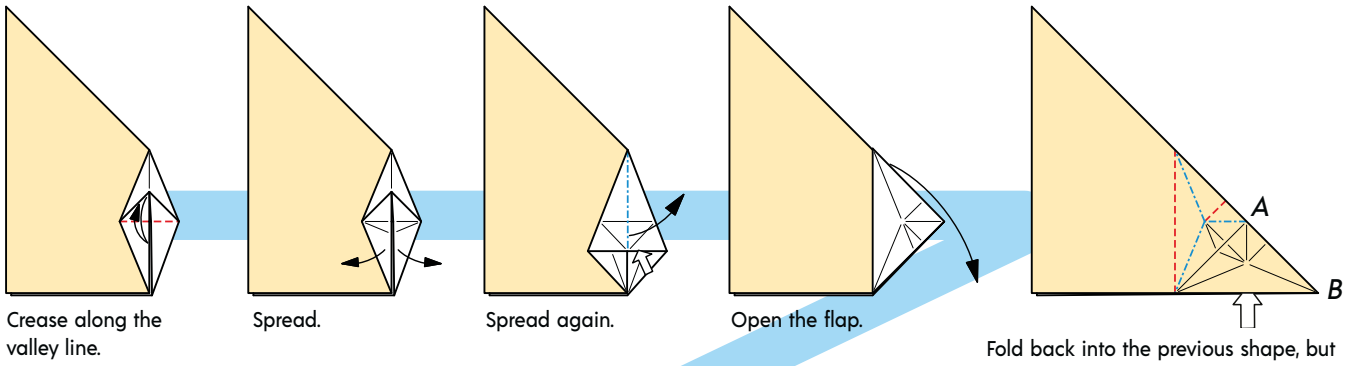
This completes the pleat fold.

Folding order

If the lines have a number next to them, follow the order and fold accordingly.



Wrap and re-form layers



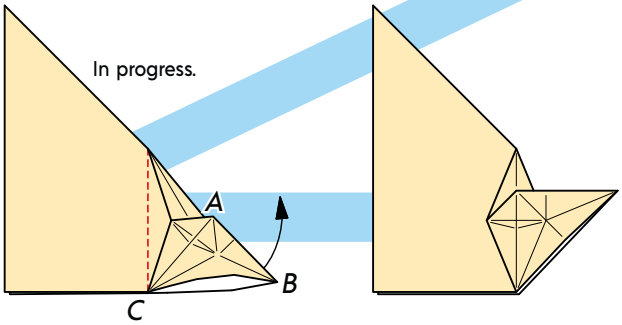
Crease along the valley line.

Spread.

Spread again.

Open the flap.

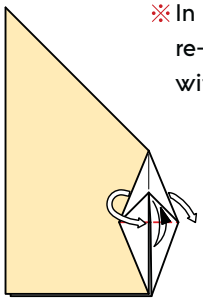
Fold back into the previous shape, but keep the section between A and B flat.



Bring the ABC triangle up and inward.

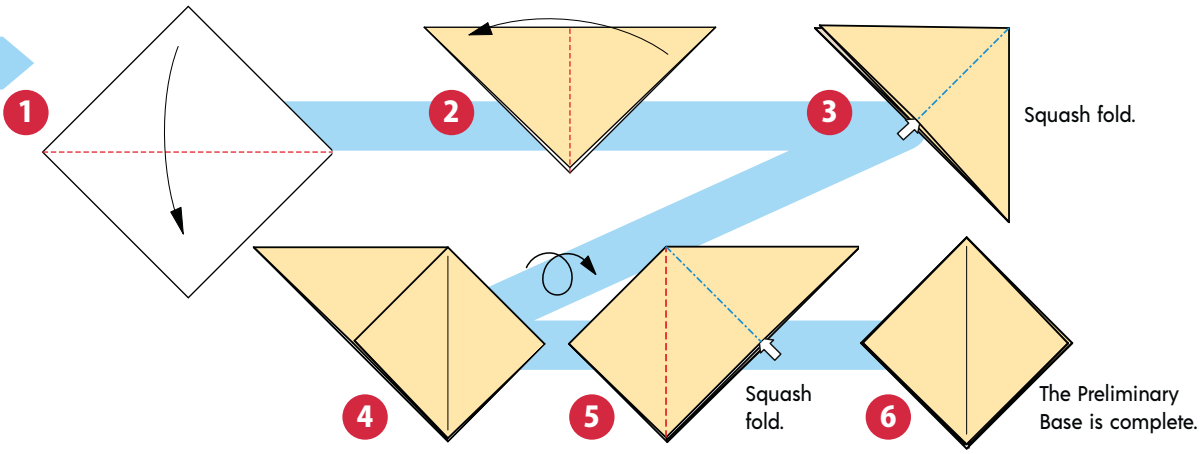
The layers are re-formed.

※In this book, layer re-forming is indicated with these symbols.



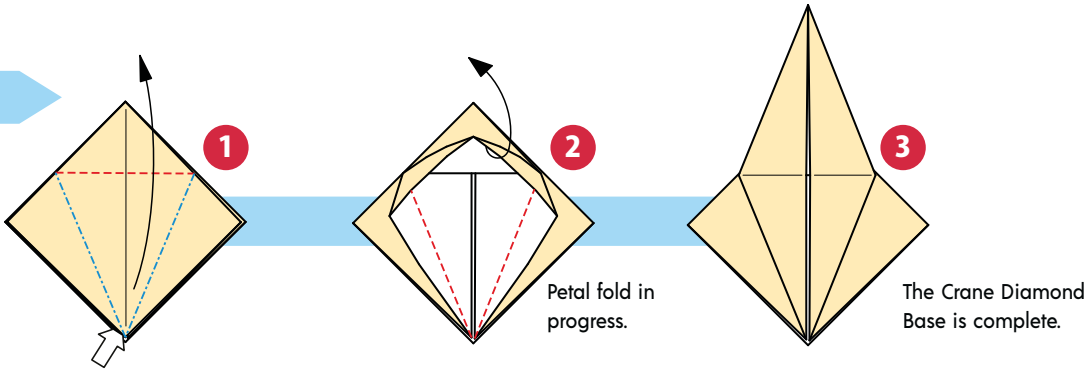
ORIGAMI BASES

Preliminary Base

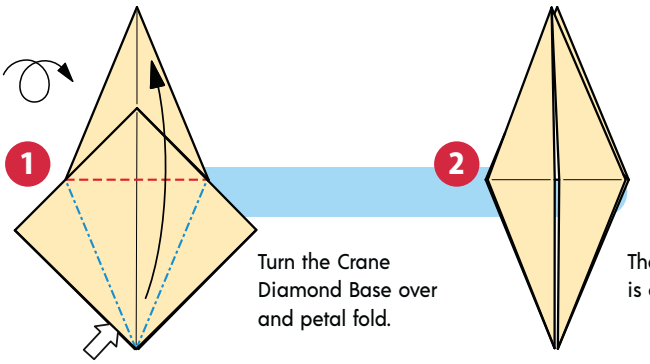


Crane Diamond Base

Start from the Preliminary Base. Raise the top layer, and squash fold both sides (this is called a "petal fold").

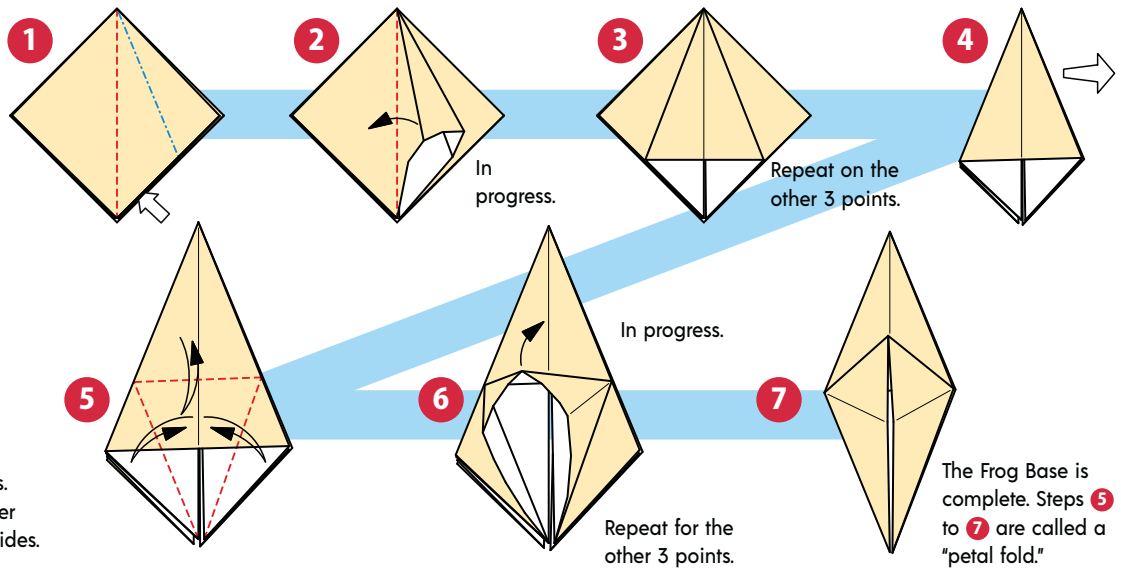


Bird Base



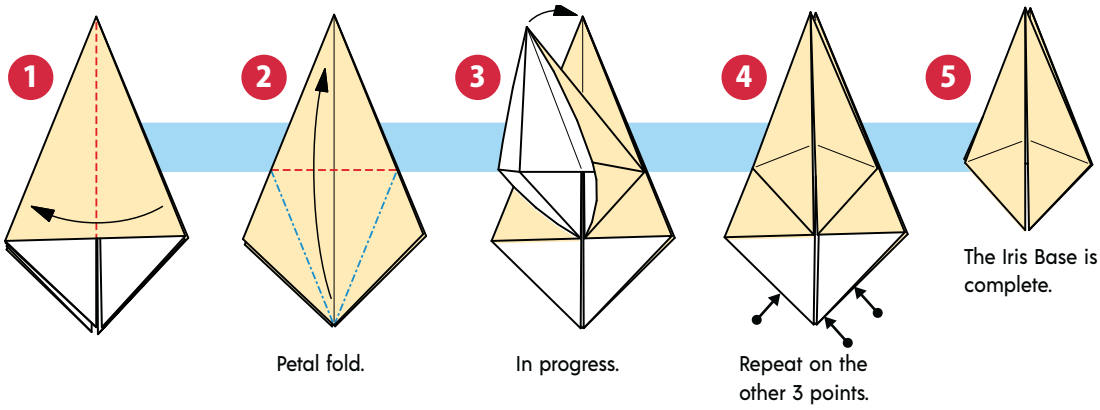
Frog Base

Starting from the Preliminary Base, squash fold.

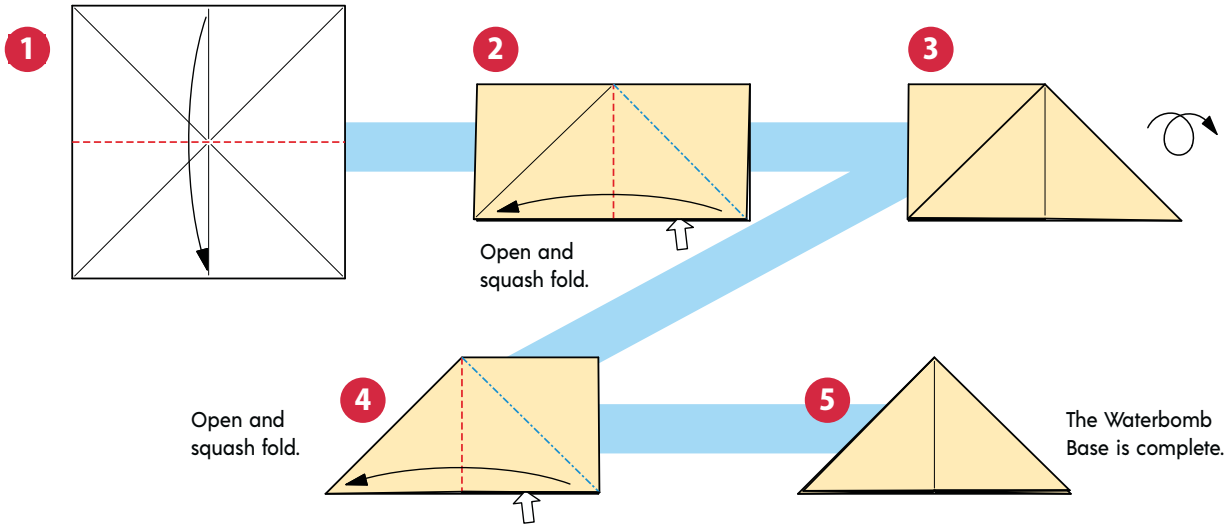


Iris Base

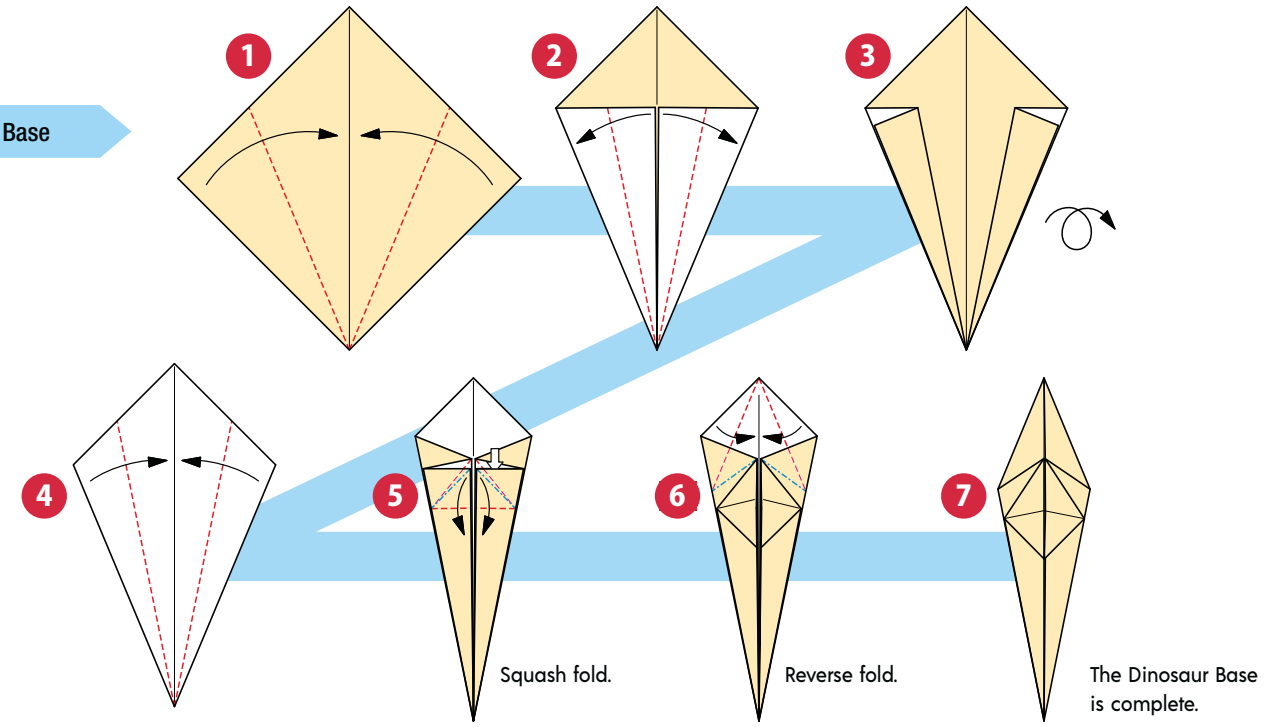
Start from step 4 of the Frog Base. Swing over one layer, and then petal fold. Repeat on the other sides.



Waterbomb Base



Dinosaur Base



HOW TO MAKE LIFELIKE ORIGAMI (USING GLUE)

About Using Glue

One of the keys to making lifelike origami is using craft glue to affect and set the final form. Despite being challenging to do correctly, the finished product will be more realistic and beautiful, as well as strong and durable—so I recommend that you give it a try!

Glue can either be added after the folding is complete or applied incrementally as you fold the origami. (I have added indications in the project instructions for when glue can be applied incrementally). Apply the glue (use slightly diluted craft glue) at the indicated points on the back side of the paper. After the folding is done, add more glue to each fold. Spread glue evenly to bind loose flaps together. However, if there's any sinking or squashing to be done after folding the basic shape, add glue to those parts last (after the sinking or squashing has been accomplished).

If you accidentally put glue in the wrong place, simply wipe it off. Even if it has dried, poorly placed glue can be softened and wiped away after a few minutes by painting the area with a moistened brush.

To prepare the glue solution, slightly dilute some craft glue with water. For application, I suggest you use a 10 mm brush. Also prepare a small water container and a piece of cloth to clean and wipe the brush.

Follow the project steps until the text "Start applying glue" is annotated. This is the Octopus (page 98).

Slightly spread and open the paper.

While being mindful of the creases, apply glue to the correct points on the inside of the model.

Fold back to the previous shape.

While folding back to the previous shape, apply more glue. Remember to only apply glue where necessary.

Keep folding back into shape and applying glue until done.

Follow the instructions and keep folding.

While proceeding, apply more glue when the opportunities arise.

Apply glue in tight locations as well, such as the back of the head in this case.

After the folding is done, mold the paper into more natural, realistic positions with your fingers.

▼ Glue has been applied

▼ No glue used

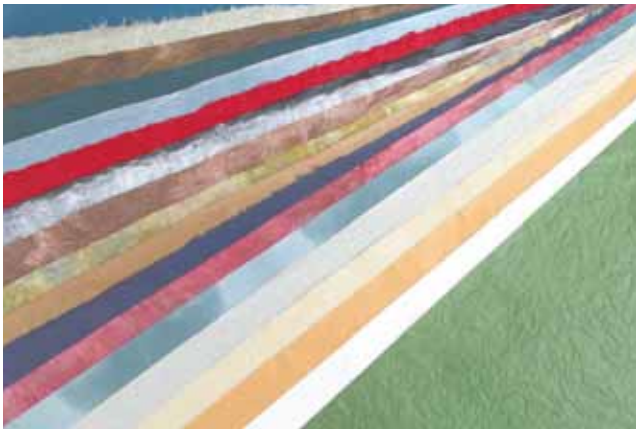
Note

Applying glue—while being a very important element in folding lifelike origami—is completely optional. Even just folding is plenty of fun.

ABOUT THE PAPER

Types of Paper and Sizes

For each model, I specifically indicate the type and size of paper that you should use. All of the origami in this book calls for *washi* (Japanese paper, see photo on the right), which has a luxurious weight and texture. There are various types of washi that are easy to fold into several thin layers. In order to produce more beautiful and realistic origami, I recommend using traditional washi with the appropriate strength and stiffness. For applying glue (see previous page), washi is much preferred over standard kami origami paper. Beginners and people who just want to try lifelike origami for fun can, of course, use standard origami paper. For standard origami paper, I generally advise using large sheets (at least 7 x 7 in / 18 x 18 cm or larger).



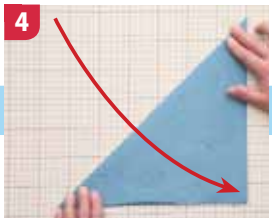
Preparing the Paper

If you use washi, you can have it cut to size at specialty stores. However, I prefer to cut the washi myself from a large sheet (36 x 24 in / 90 x 60 cm). The size and shape of the sheets changes depending on the folding method used when cutting the large sheet. It can either be cut into 6 or 8 sheets. Once cut to size, prepare multiple Preliminary Bases in advance so they are handy for spur-of-the-moment folding.

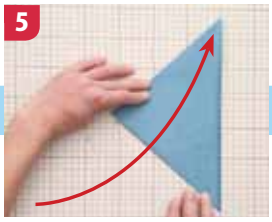
Fold a large sheet of paper into sixths.

Cut the folded edges with a craft knife.

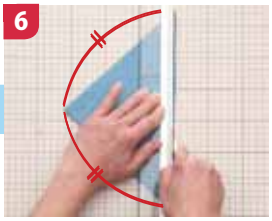
The resulting six individual squares.



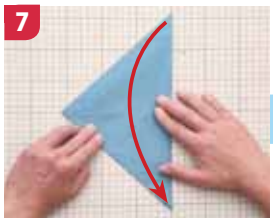
Fold each square into a triangle.



Fold again into a smaller triangle.



Use a craft knife to cut along the long side, in order to straighten the edge.



Only fold the upper layer in a triangle shape. If the corners match perfectly, the cut was successful.

From there, just fold into a Preliminary Base (page 10).

Complete. Store prepared sheets out of direct sunlight.

Strengthen Thin Paper

If your paper is very thin and likely to tear, apply CMC (photo 1: carboxymethylcellulose—available in craft shops) before using. CMC is typically used for leather crafts. For this use, dissolve 1 tablespoon and 1 teaspoon (20 g) of CMC into 2 cups (500 ml) of water and apply it to thin Japanese paper (photo 2).

To display a different color on the back, adhere a second sheet. Use commercially available craft glue diluted with about twice the amount of water. Apply to the paper with a brush, and then overlay and adhere the backing sheet of paper, carefully smoothing any trapped bubbles to the edges.

Difficulty: ★★☆

PENGUIN

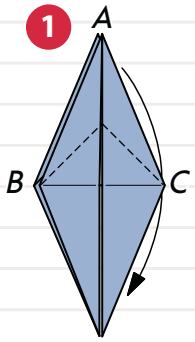
Type of paper used:

- Handmade Washi (coarse thin white paper with black on the reverse)
- 10¼ x 10¼ inch (26 x 26 cm)
- 1 sheet

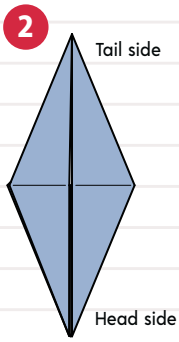
Folding Tips

I created the Penguin model after receiving specific requests to create a penguin from students in my origami class. This is a relatively simple model that starts from the Bird Base. The paper being used here is white and black washi paper adhered together. Because the folds are rather simple, the Penguin is easily reproduced using general-purpose origami paper as well. I recommend using paper that is larger than 8 inches (20 cm). Even if using general-purpose origami paper, the form of the final product can be stabilized by applying glue, which enables you to put the model on display indefinitely. It is possible to give the Penguin different poses, such as one with the wings outstretched or one with its head lowered to feed a chick. Enjoy experimenting with these poses. When adjusting its shape, I recommend making the body 3-D by pressing on the mountain crease (on the white back side of the paper) because this will create a small space between the two feet and allow the final product to stand independently.

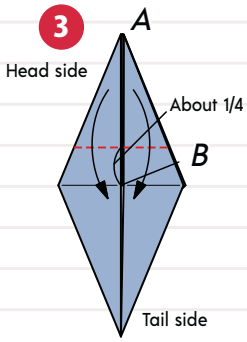
Start from the Bird Base (page 10)

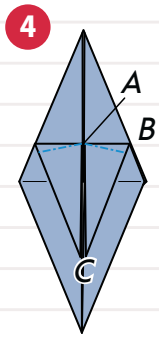


Fold the rear flap (ABC) behind.

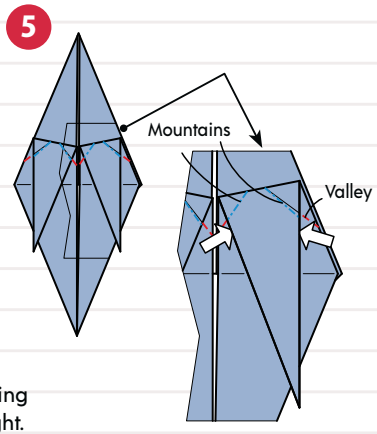


Rotate the paper 180°.

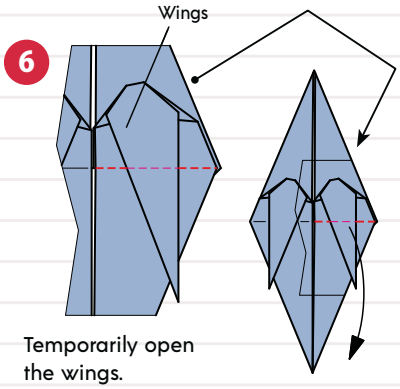




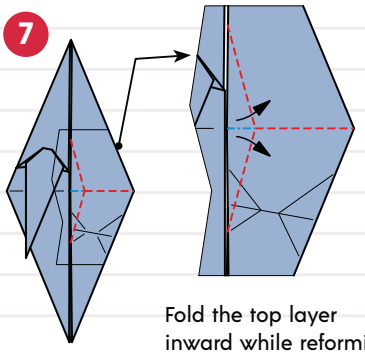
Slide the flap up from center point A. The resulting edge BC should lie straight. Repeat on the other side.



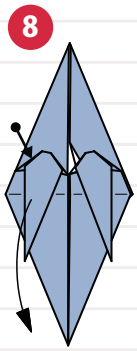
Reverse fold the two corners. Repeat on the other side.



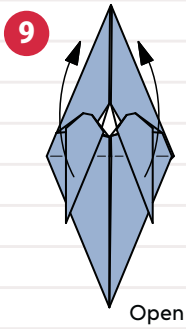
Temporarily open the wings.



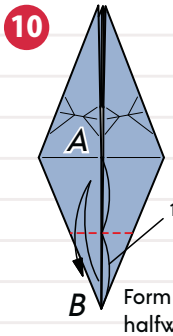
Fold the top layer inward while reforming the folds for the wing.



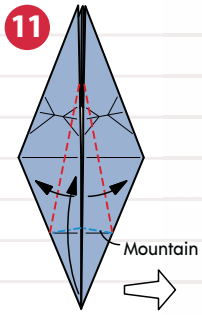
Repeat steps 6 – 7.



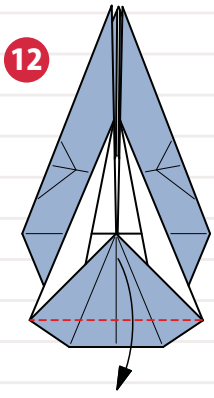
Open up the wings.



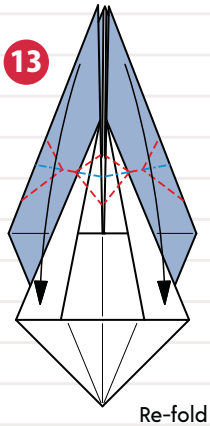
Form a crease about halfway between points A and B.



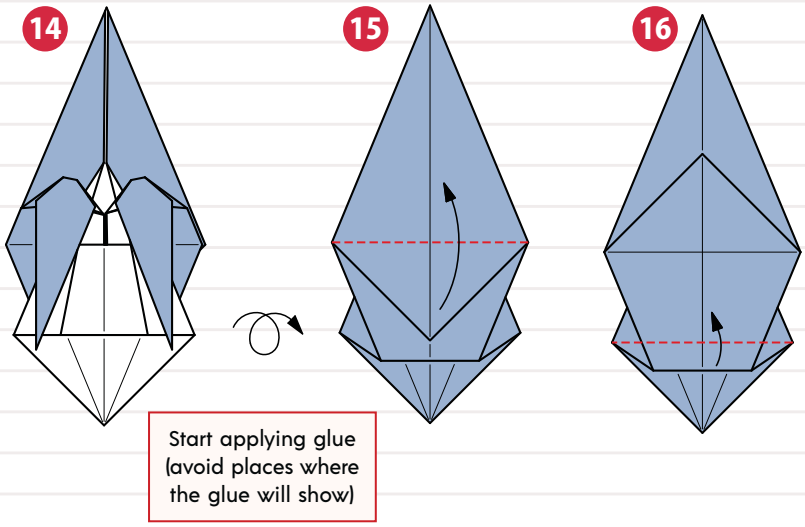
Fold the top layers outward while squashing the bottop flap up.

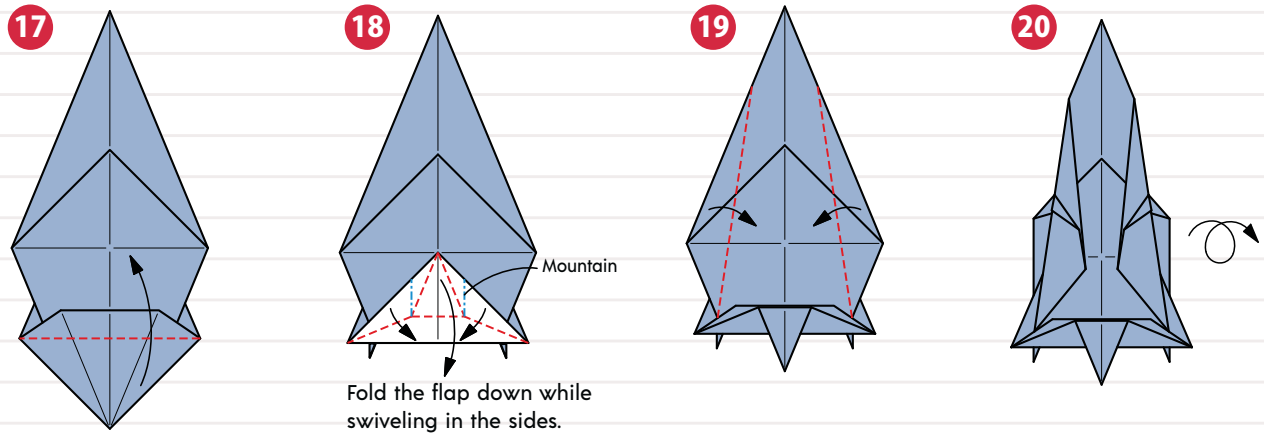


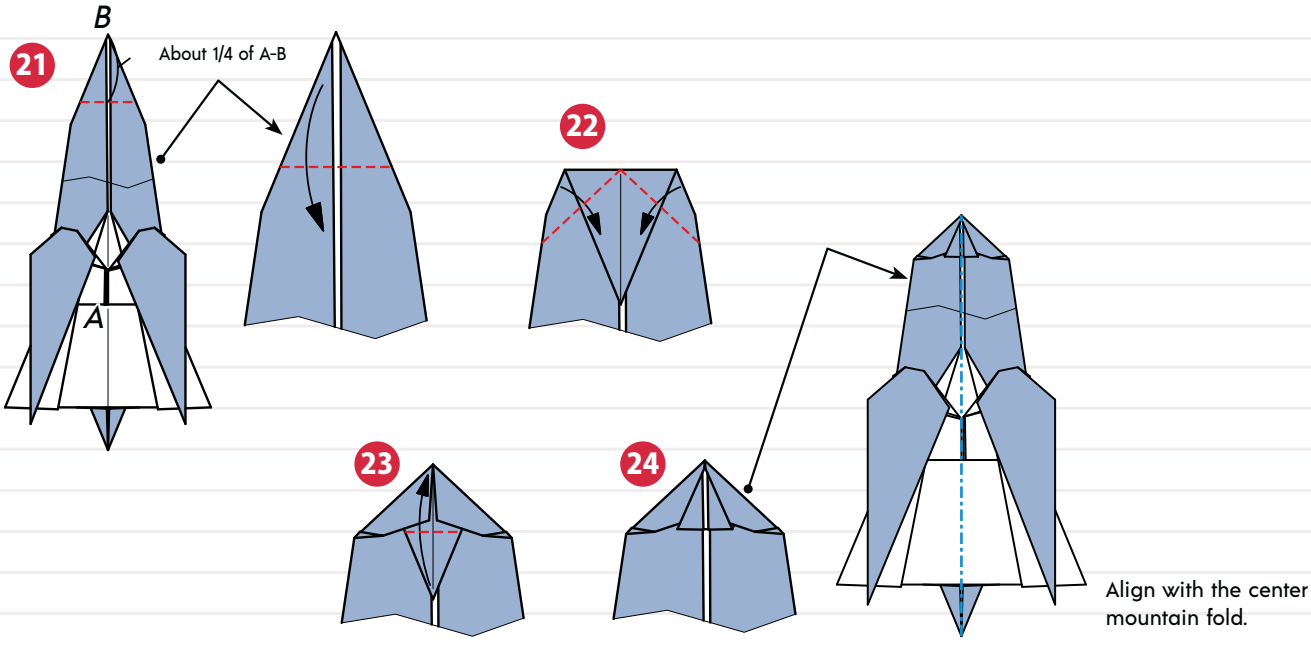
Valley fold the flap down.

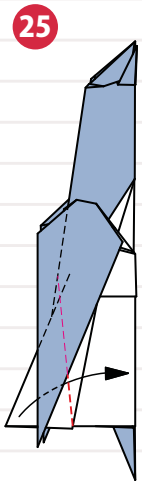


Re-fold the wings.

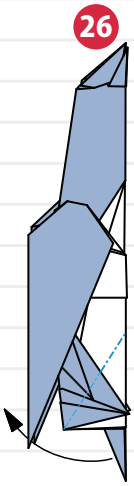

14
15
16
Start applying glue (avoid places where the glue will show)


17
18
19
20
Mountain
Fold the flap down while swiveling in the sides.

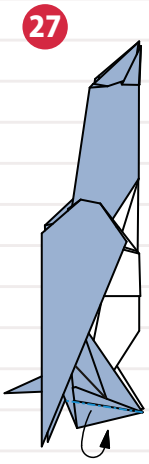

21
B
About 1/4 of A-B
A
22
23
24
Align with the center mountain fold.



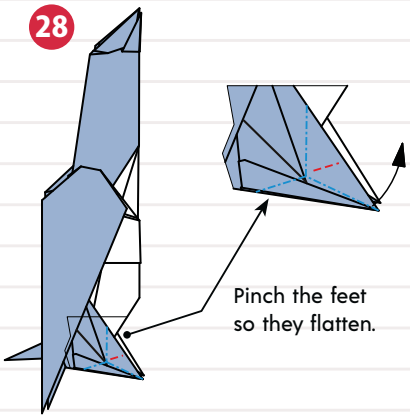
25 Valley fold. Repeat on the other side.



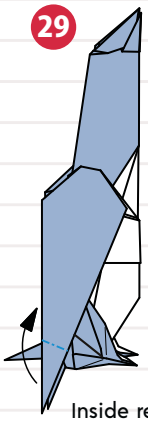
26 Inside reverse fold the center.



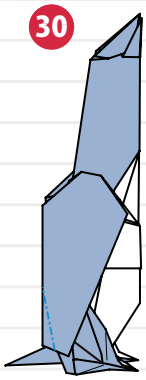
27 Mountain fold the bottom edges inside.



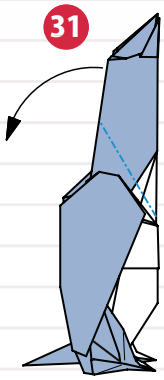
28



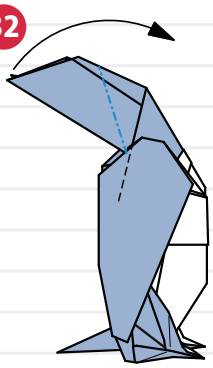
29 Inside reverse fold the tips of the wings.



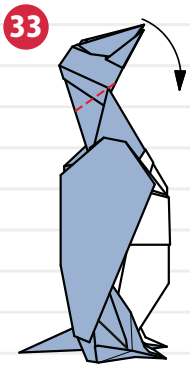
30 Mountain fold the edges of the wings inside.



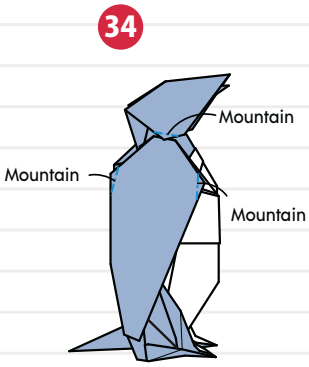
31 Inside reverse fold the center.



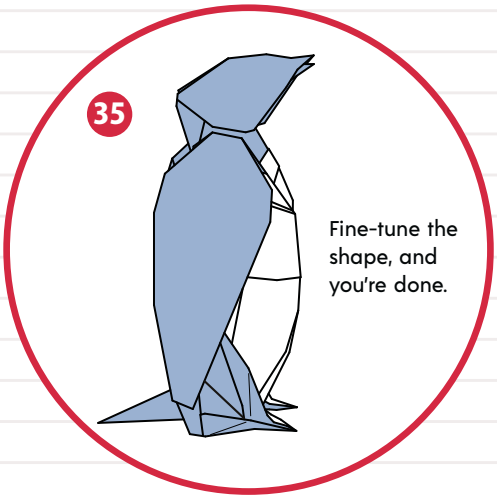
32 Inside reverse fold the center.



33 Wrap the head flap around and flatten.



34



DOLPHIN

Difficulty: ★★

Type of paper used:

- Handmade Washi
- 9 x 9 inch (23 x 23 cm)
- 1 sheet

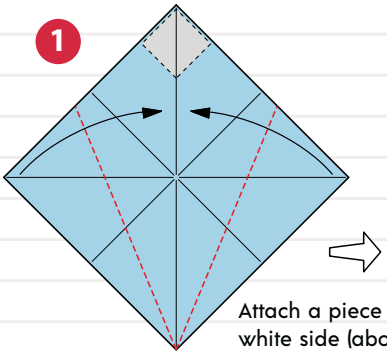
Folding Tips

You will begin this model by partially folding the Dinosaur Base. The mountain creases you will make in step 16 will fall into place naturally, but it is a rather complex pattern. The creases you will make in step 12 will facilitate subsequent folds.

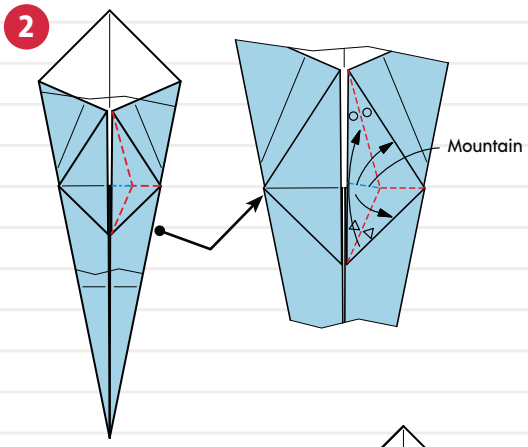
Marine mammals such as dolphins, whales, and dugongs have relatively simple bodily structures compared to land mammals, hence the body must be puffed up to create a 3-D look in order to end up with a nicely rounded form. Applying glue will go a long way toward maintaining this form.

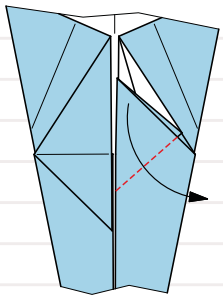
While completing step 20, a flap will form in the middle. You can fashion a nice-looking lower jaw by slightly pulling this flap away from the head. Step 26 is where you'll do this.

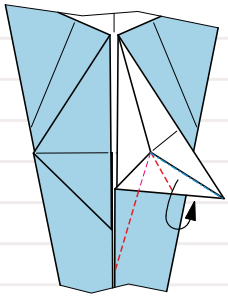
Start from the Dinosaur Base (page 11), fold through step 5



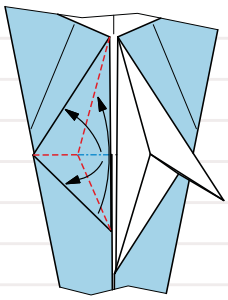
Attach a piece of paper to the hidden white side (about 1/5 of the length of the portion of the paper that you are working with) (See step 1 of the Polar Bear project that begins on page 31).



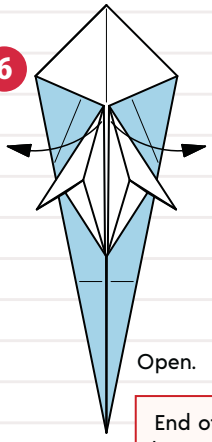




Swivel fold under.

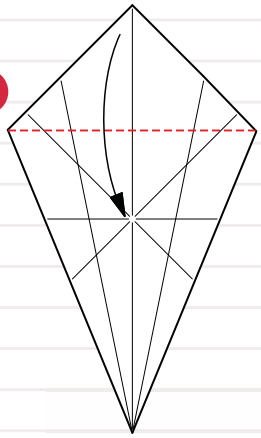


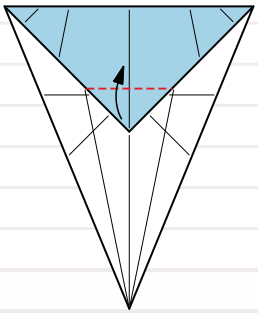
Repeat steps 2–4.

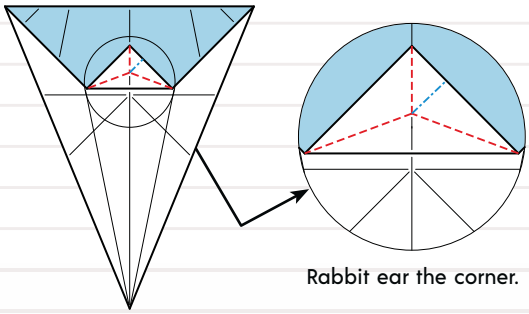


Open.

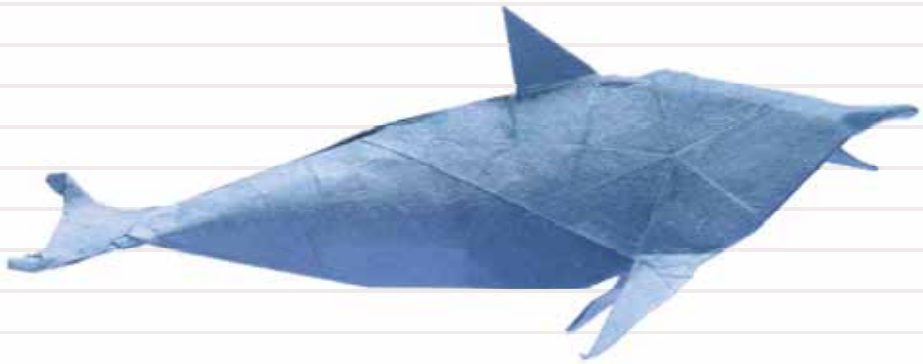
End of the basic folds

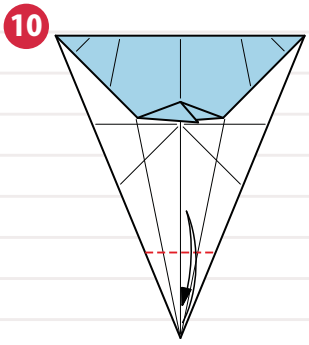




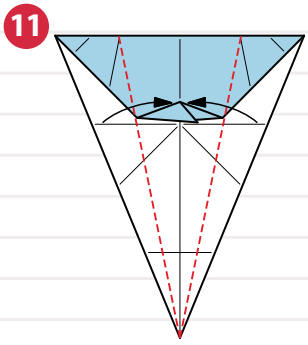


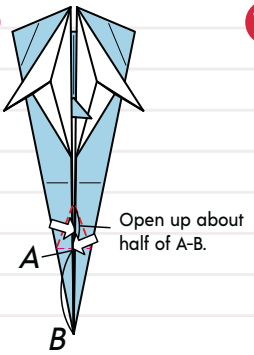
Rabbit ear the corner.



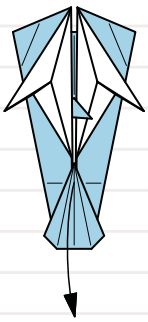


Form a crease at the bottom. This will define the length of the model.

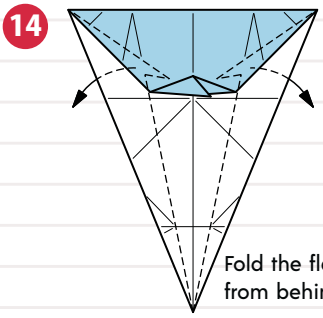




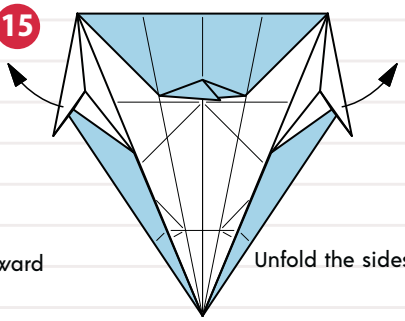
Open and squash fold.



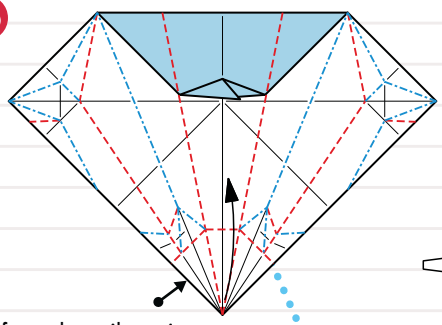
Open and unfold back to the state shown in step 11.



Fold the flaps outward from behind.



Unfold the sides.

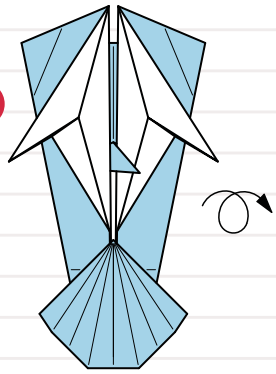


Reform the tail portion, changing the direction of some of the folds.

Make two mountain fold lines on both the left and right side.

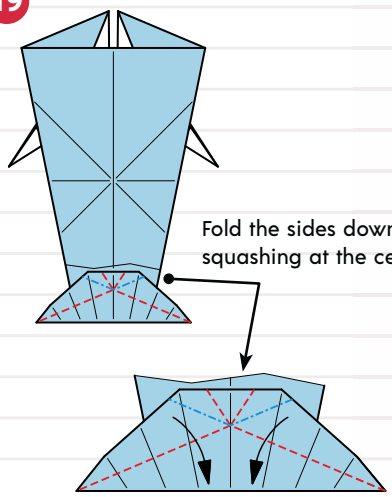
After forming the mountain fold lines, valley fold the bottom flap up.

Flatten the tail.

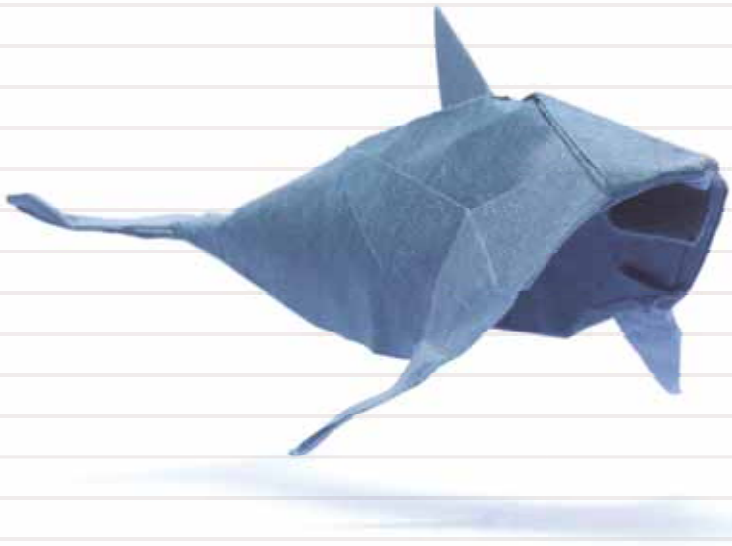


Start applying glue (apply glue only to parts where the glue won't show).

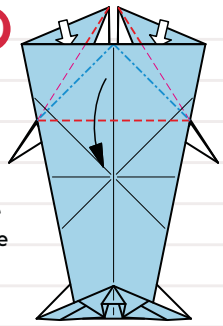
19



Fold the sides down, squashing at the center.

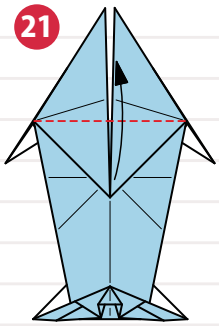


20

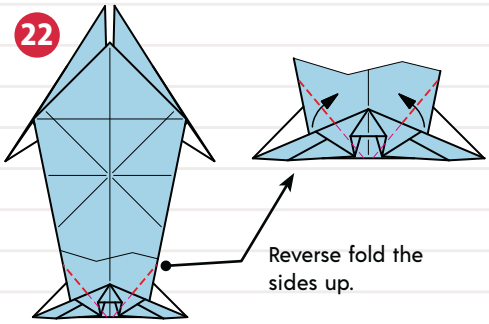


Inside reverse fold the sides, petal folding the edge down. The flap that forms will become the jaw.

21

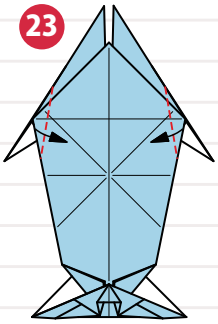


22

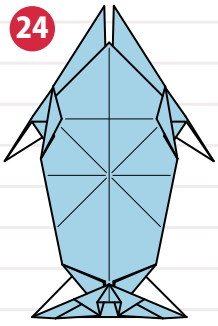


Reverse fold the sides up.

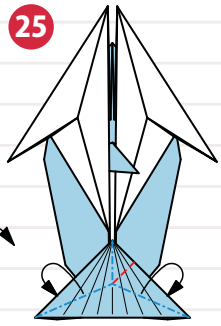
23



24



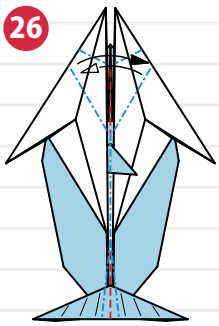
25



Valley fold two sets of corners at each side.

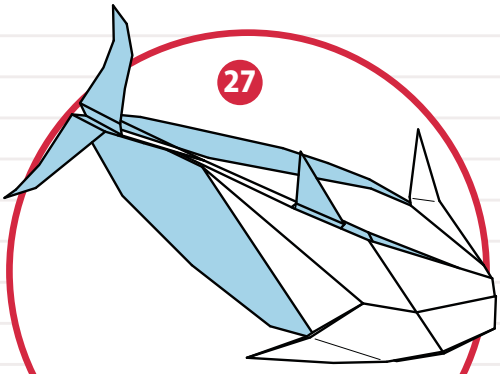
Rabbit ear the corner, tucking the resulting flap inside.

26



Overlap the two top flaps and tuck the tips inside. Open the head portion to make it three-dimensional and shape the tail.

27



Fine-tune the shape, and you're done.

Difficulty: ★★

BLUE WHALE CALF

Type of paper used:

- Handmade Washi (pearlescent finish)
- 12¼ x 12¼ inch (31 x 31 cm)
- 1 sheet

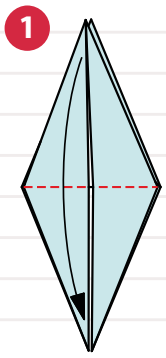
Folding Tips

Start folding from the Bird Base. There are two consecutive squash folds from steps 2 to 3, and the dorsal fins are created from the squashed portion. This is similar to the Manta Ray (page 42). The squashed portions become thick, so I recommend that you use thin papers. Because applying glue to the insides after the two consecutive squash folds is difficult, I recommended that you apply glue in advance after the completion of step 4.

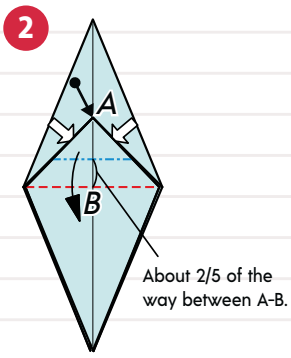
For the final adjustments, the body must be rounded. I recommend that you apply glue as a way to maintain this form.

If the lower jaw is opened too widely, the final overall form of the model will lack definition. Although not called for in the instructions, one can add reinforcement (roughly 1/5 the length of the edge to be reinforced) to the portion that will become the lower jaw. See the Polar Bear (page 31) instructions (step 1) for reference.

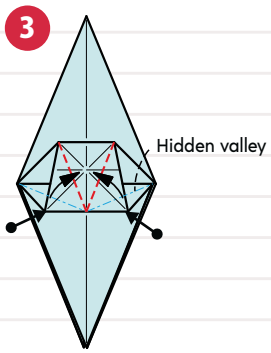
Start from the Crane Base (page 10)



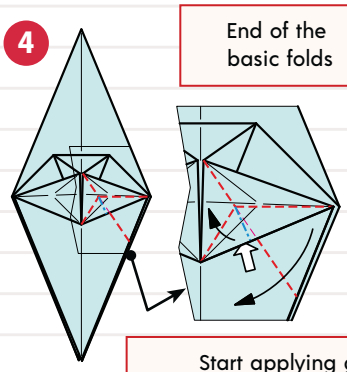
1 Swing down one flap only.



2 Squash fold the center flap.

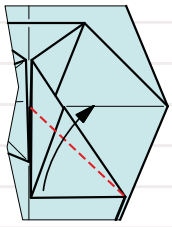


3 Squash fold the side corners.

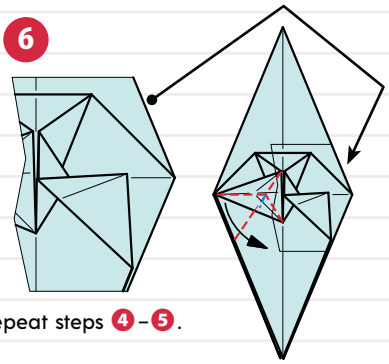


4 End of the basic folds

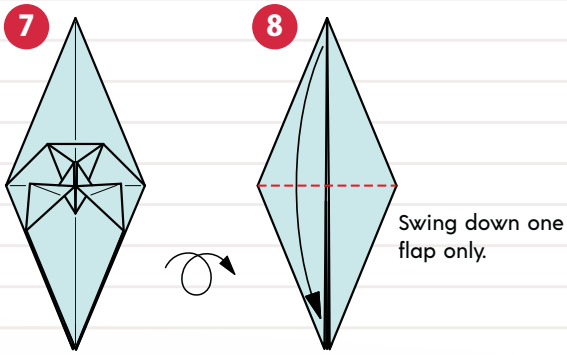
Start applying glue (glue the back of the parts squashed in steps 2 and 3)



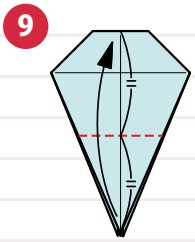
5



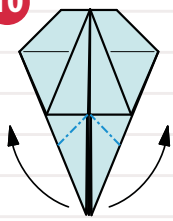
6 Repeat steps 4–5.



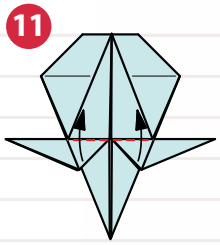
7 8 Swing down one flap only.



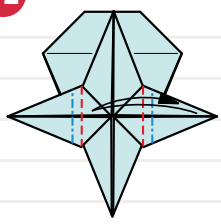
9 Valley fold the upper flap to the top.



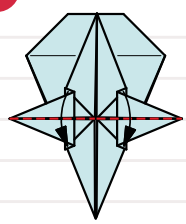
10 Inside reverse fold the side flaps.



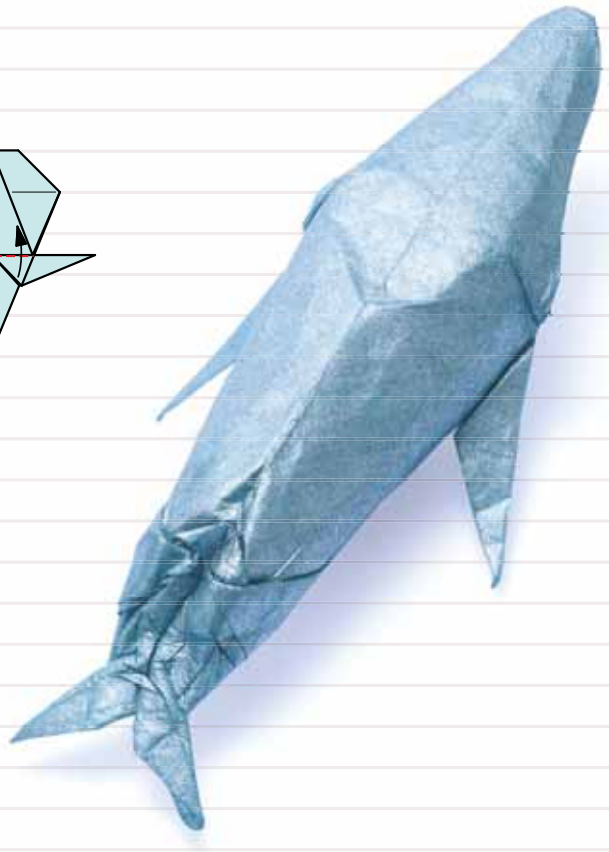
11



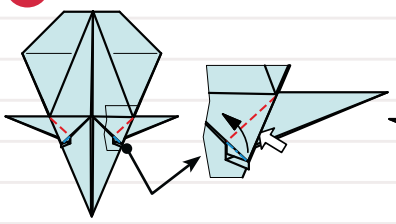
12 Pleat the side flaps.



13

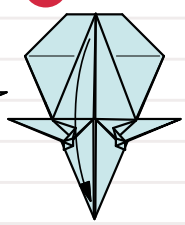


14



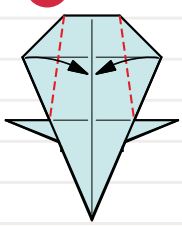
Fold the corners up, allowing small squash folds to form.

15

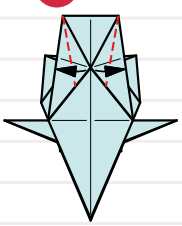


Swing the flap back down.

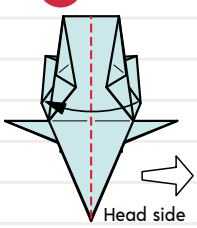
16



17

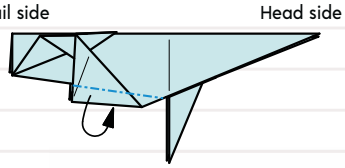


18



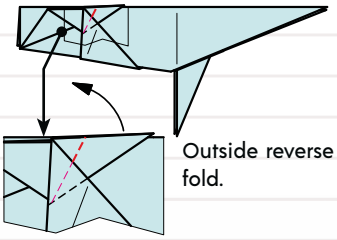
Valley fold in half. Rotate the model.

19



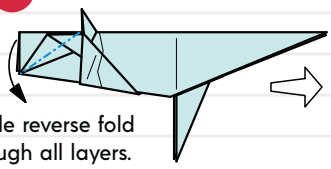
Mountain fold the edges inside.

20

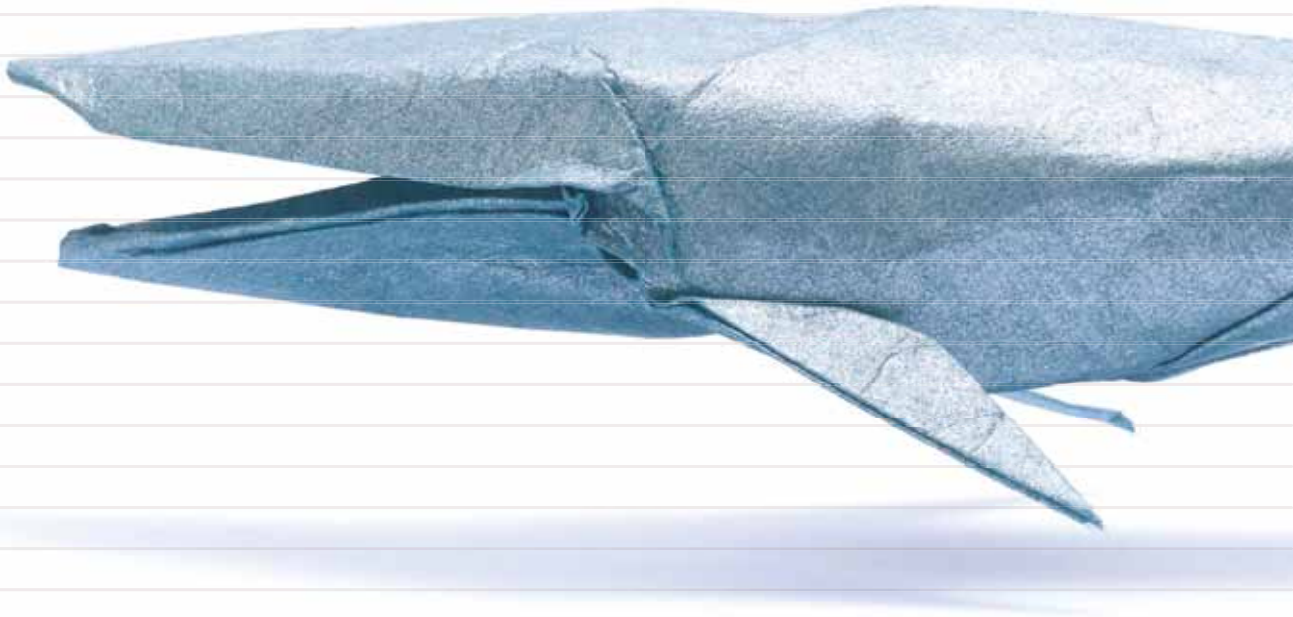


Outside reverse fold.

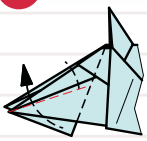
21



Inside reverse fold through all layers.

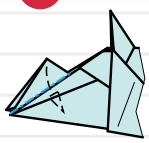


22



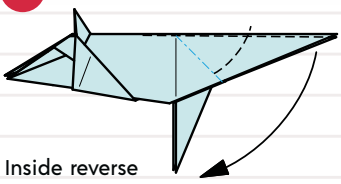
Inside reverse fold the flap back up.

23



Reverse fold down.

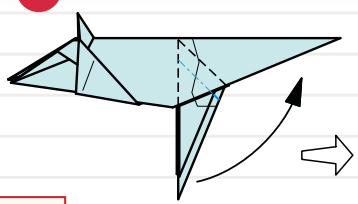
24



Inside reverse fold the hidden flap down.

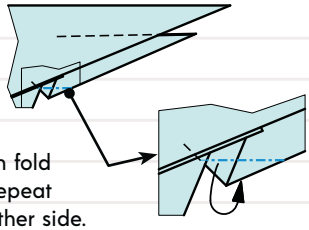
Start applying glue (for the second time—do not glue the lower back part of the jaw)

25



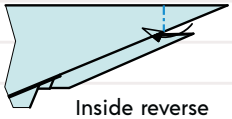
Inside reverse fold the flap back up.

26



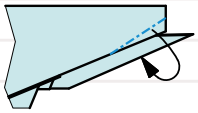
Mountain fold inside. Repeat on the other side.

27

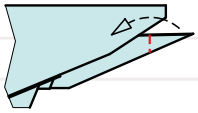


Inside reverse fold.

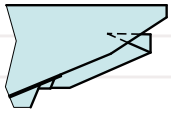
28



29

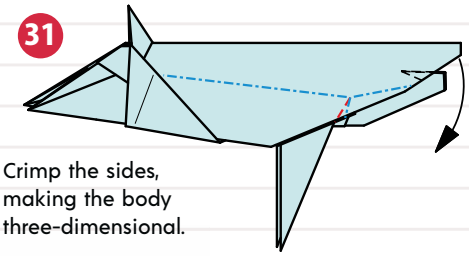


30

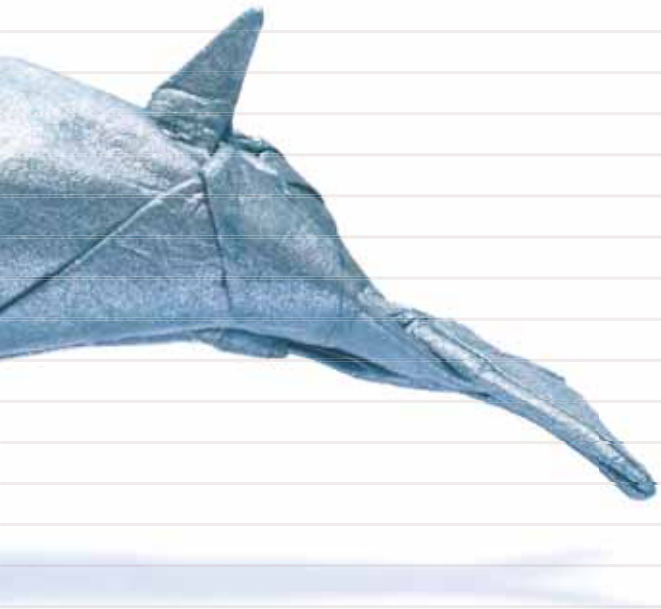


Open out the flap that was just folded and inside reverse fold it.

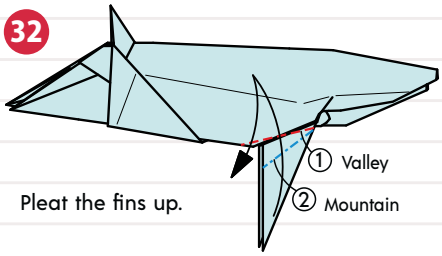
31



Crimp the sides, making the body three-dimensional.

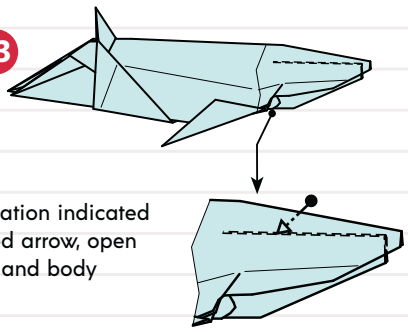


32



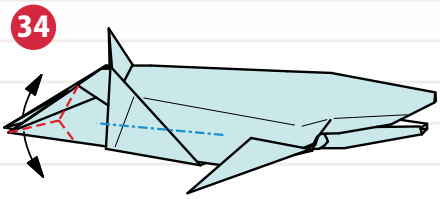
Pleat the fins up.

33



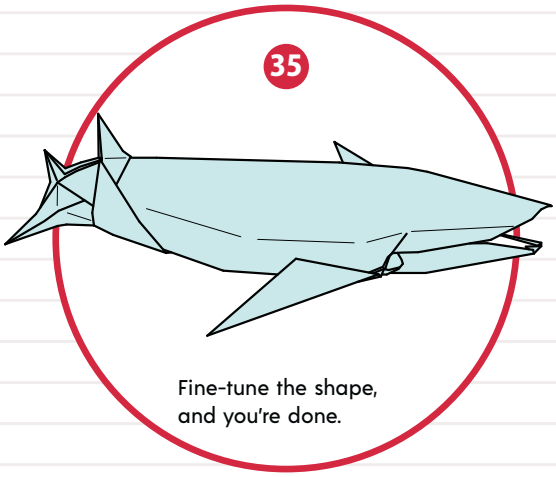
Starting from the location indicated by the dot-terminated arrow, open and make the head and body three-dimensional.

34



Fold the tail with rabbit ear folds.
Make the body more three-dimensional with mountain fold creases.

35



Fine-tune the shape, and you're done.

DUGONG

Difficulty: ★★☆

Type of paper used:

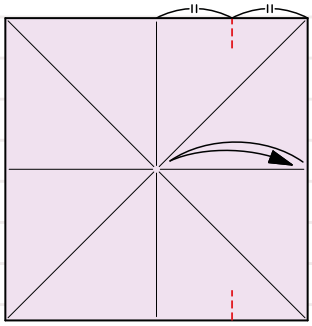
- Handmade Washi
- 9 x 9 inch (23 x 23 cm)
- 1 sheet

Folding Tips

The process for folding the tail fin can be applied to other marine animals as well, if one is up for the challenge. In steps 40 and 41, the suggestion of eyes are created by folding two flaps. Be careful not to make the eyes too big.

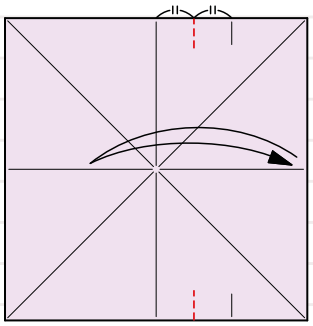
When using the front fins to adjust the shape, the final form will look better if parts of the body are folded together with the fins. As with the Dolphin (page 18) and Blue Whale Calf (page 22), I recommend that you apply glue to maintain the three-dimensional form.

1



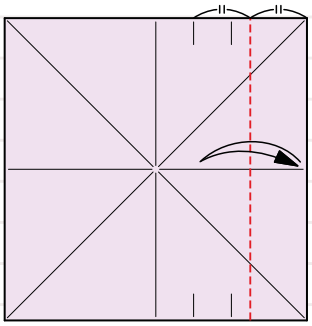
Make pinch marks at the halfway point on the right side.

2



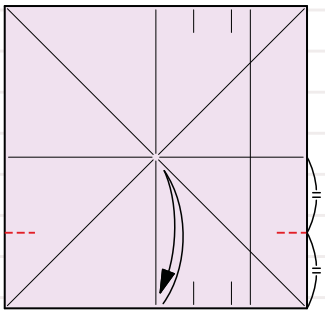
Make pinch marks at the halfway point between the middle and the pinch marks made in step 1.

3



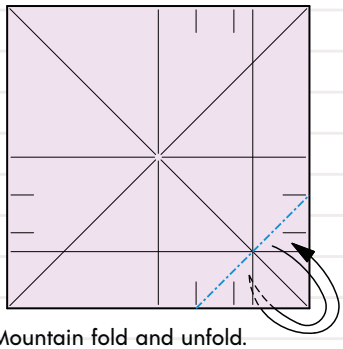
Crease the indicated section in half with a valley fold.

4



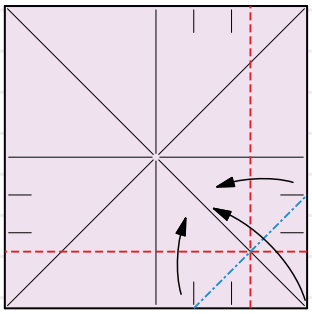
Repeat steps 1 – 3 horizontally.

5



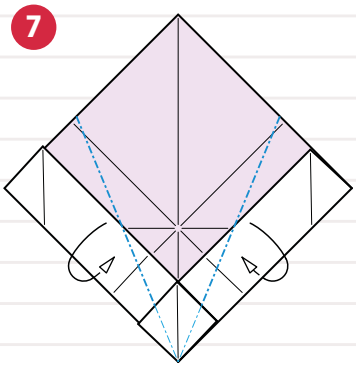
Mountain fold and unfold.

6

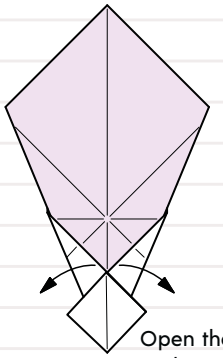


Fold the sides in, squashing the corner flat. Rotate the model.

7

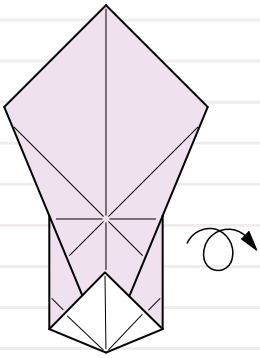


8

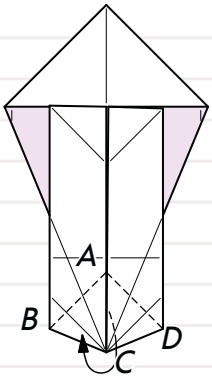


Open the top layers and squash flat.

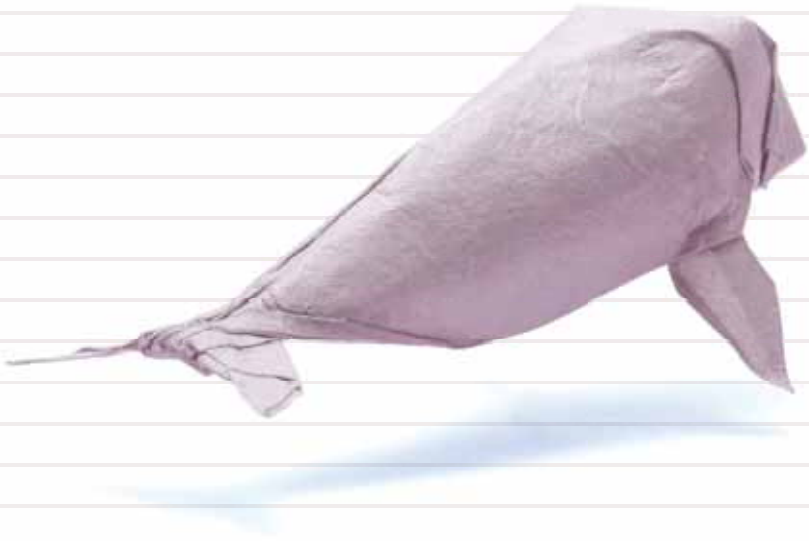
9



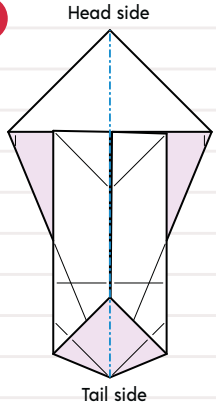
10



Wrap the hidden ABCD flap around to the front.

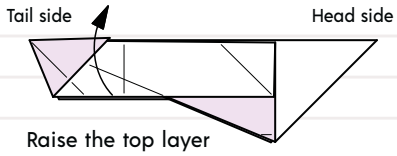


11



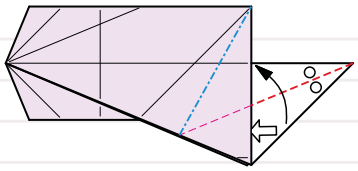
Mountain fold in half
and rotate the model.

12



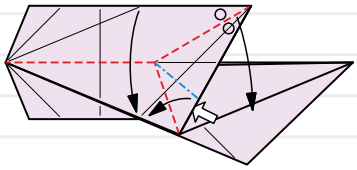
Raise the top layer
on one side only.

13

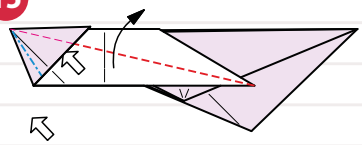


Valley fold along the angle bisector,
swiveling in at the side.

14

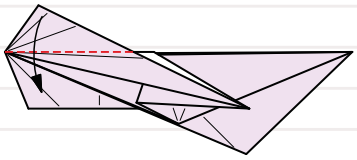


15

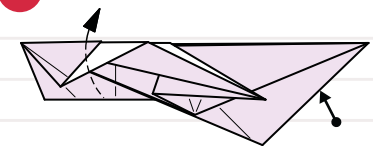


Keeping the original cor-
ner aligned at the top edge,
squash the top layer up.

16

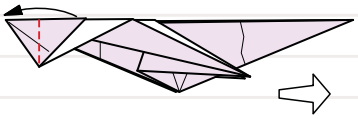


17

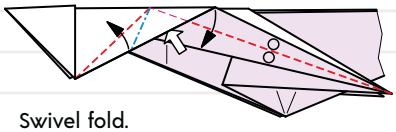


Repeat steps **12**–**16**
on the other side.

18

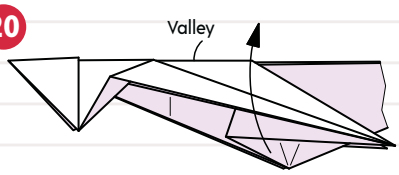


19



Swivel fold.
Repeat behind.

20

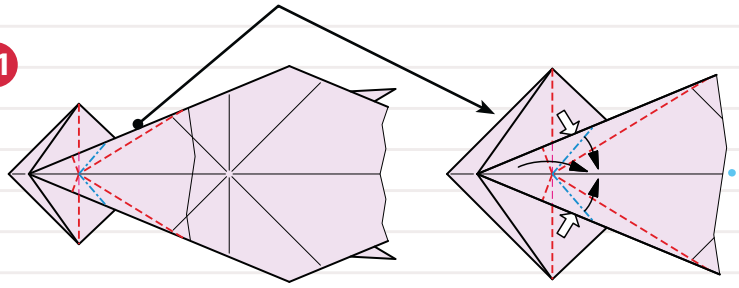


Open along the center.

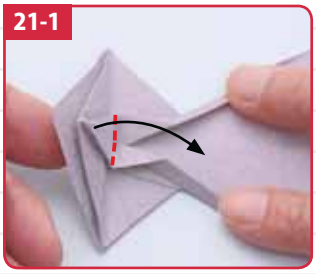
End of the
basic folds

Start applying glue (apply
glue only to parts where
the glue won't show)

21

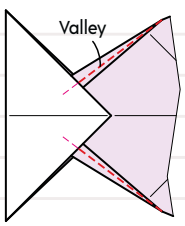


21-1

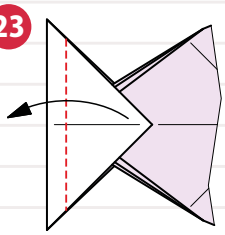


Swivel in the sides and fold the two
layers together at the same time.

22

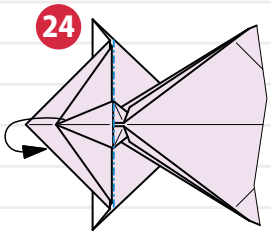


23

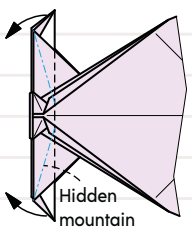


Valley fold the layers
over as far as possible.

24

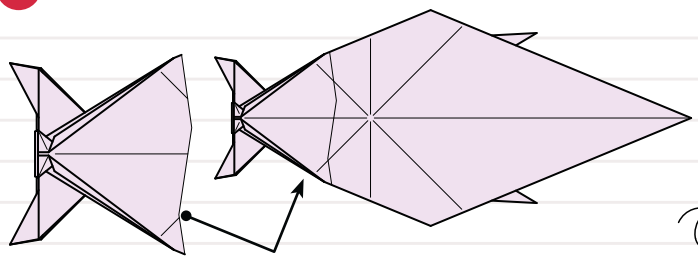


25



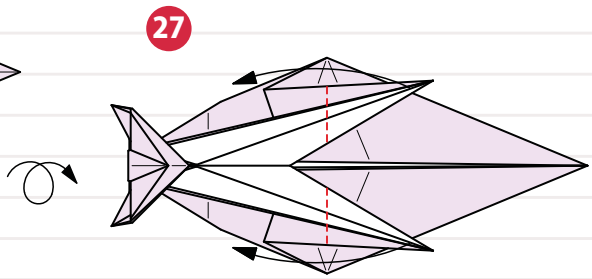
Reverse fold the flaps.

26

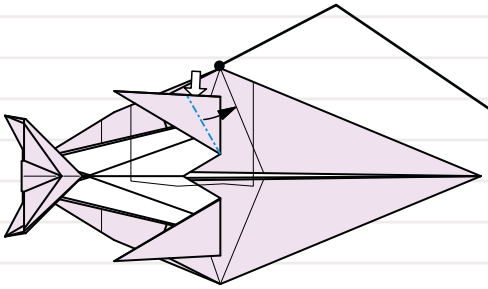


Detail of the tail. Turn over.

27

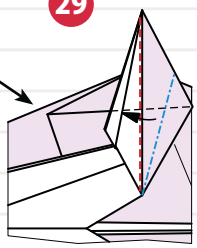


28



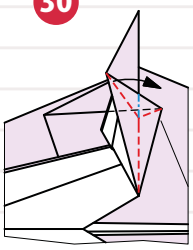
Open and squash fold from the white arrow.

29



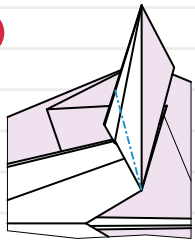
Squash fold.

30

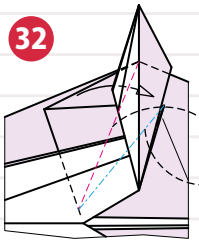


Valley fold over while forming a rabbit ear.

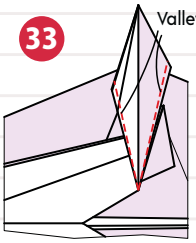
31



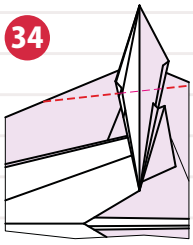
32

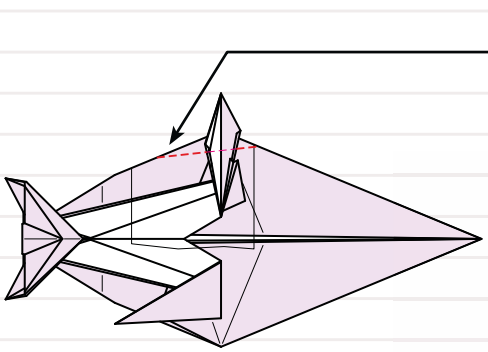


33

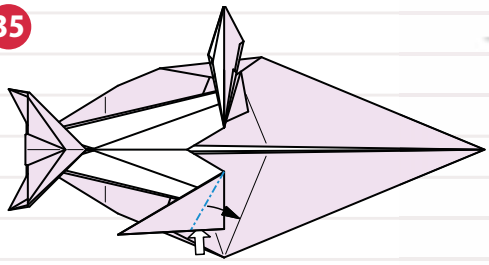


34

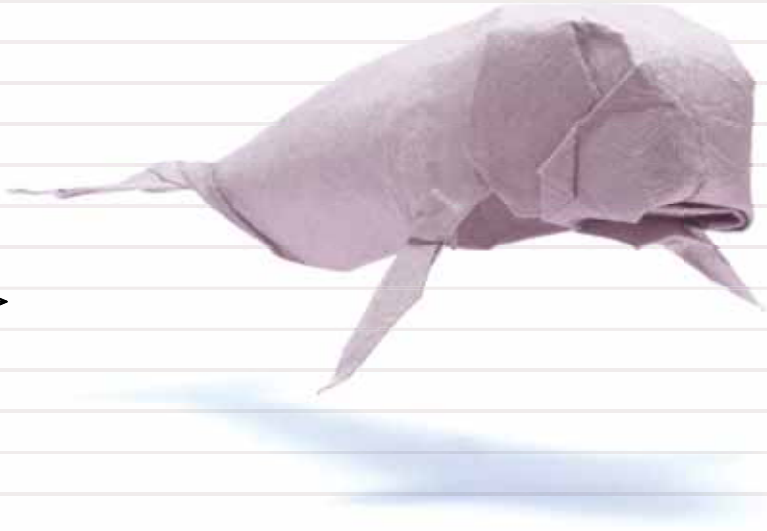


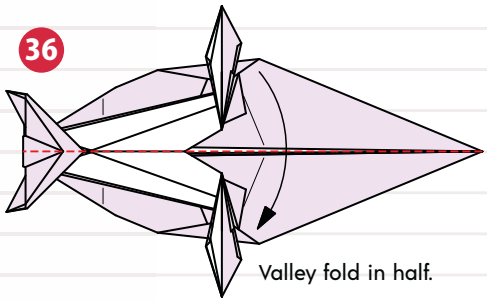


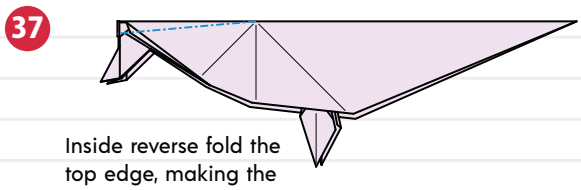
35

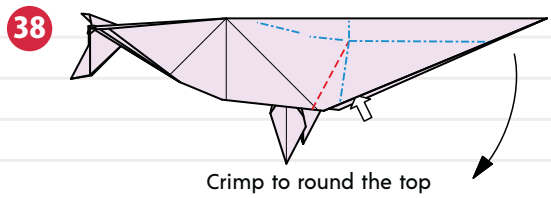


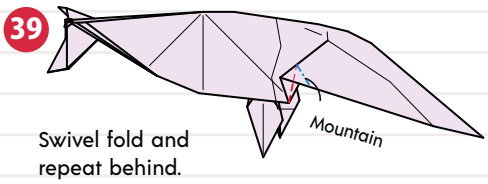
Repeat steps 28–34.

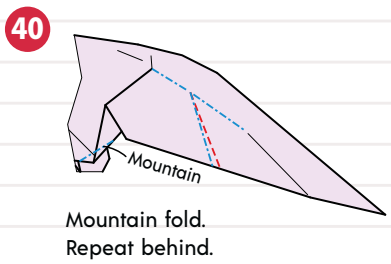


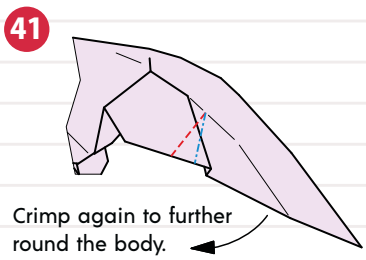

36
Valley fold in half.

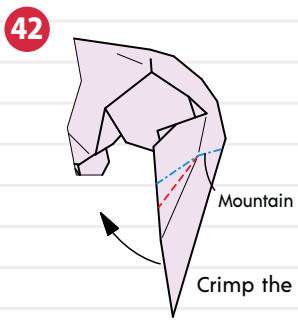

37
Inside reverse fold the top edge, making the tail three-dimensional.

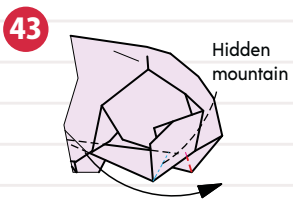

38
Crimp to round the top of the body and make it three-dimensional.

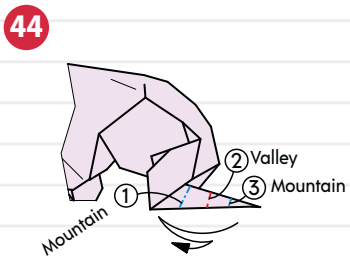

39
Swivel fold and repeat behind.
Mountain

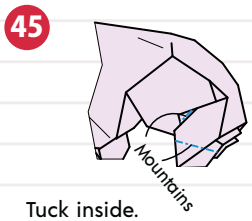

40
Mountain
Mountain fold. Repeat behind.

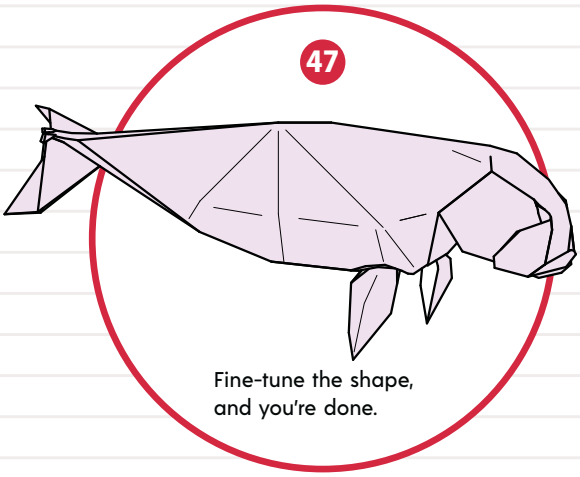

41
Crimp again to further round the body.

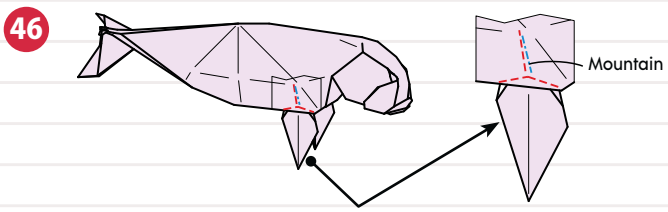

42
Mountain
Crimp the flap up.


43
Hidden mountain


44
Valley
Mountain
Mountain


45
Mountains
Tuck inside. Repeat behind.


47
Fine-tune the shape, and you're done.


46
Mountain

Difficulty: ★★½

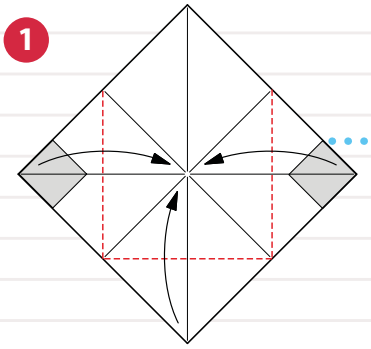
POLAR BEAR

Type of paper used:

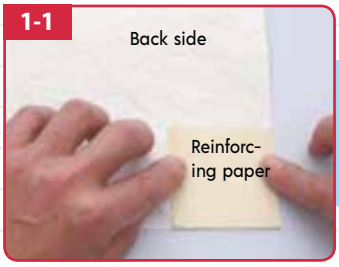
- Handmade Washi
- 12½ x 12½ inch (32 x 32 cm)
- 1 sheet

Folding Tips

I recommend that you reinforce the edges that will become the front legs before you begin folding. For the step-by-step method, refer to the photo-illustrated explanation on page 32. Determine the position of the reinforcing sheet before applying glue, partially spreading it onto the origami paper (not the sheet used for reinforcing). If you accidentally also apply glue onto the reinforcing sheet, the origami paper will become soggy and positioning the reinforcement will be difficult. It's not a problem if some of the glue extends past the edges of the reinforcing sheet; this portion is not visible from the outside of the finished model. This method of adding reinforcement is useful and common, so work to master it. This piece follows a folding method similar to other four-footed creations. Polar bears have relatively long necks, so we'll be reflecting that in this model. Additionally, we'll be making the ears appropriately small, adding some realistic tapering to the legs and paying careful attention to the body shape to give it realistic three-dimensionality.



Glue two pieces of reinforcing paper onto the edges of the back side (around 1/5th of the side length each).

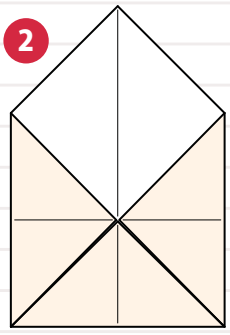


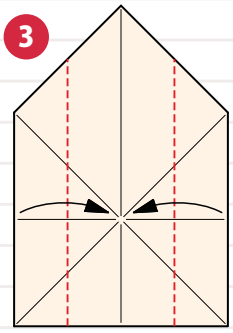
Align the reinforcing paper with the corner on the back side of the paper. Pin the inside corner with your finger.

Peel the square back halfway, and apply glue.

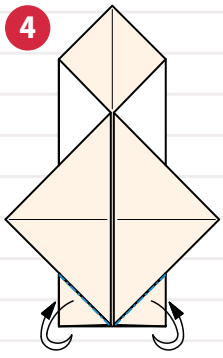
Peel back the other half of the square and apply glue.

Smooth the reinforcing paper to remove wrinkles and ensure full contact for a solid bond.

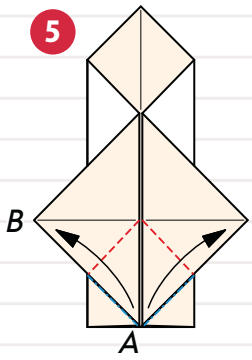




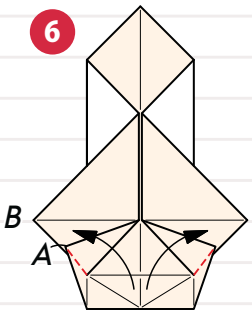
Valley fold the sides to the center, allowing the underlying flaps to swing forward.



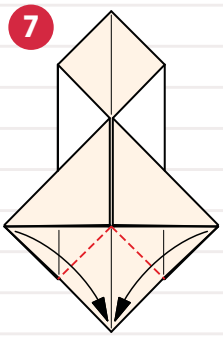
Mountain fold and unfold.

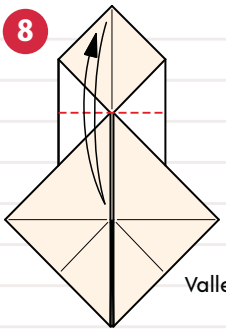


Bring corner A to corner B. Do the same on the other side. Squash flat, allowing the underlying flap to swing forward.

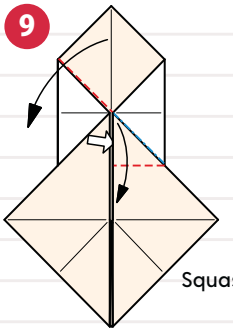


Step 5 in progress.

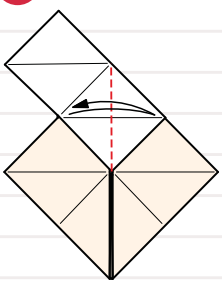




Valley fold.

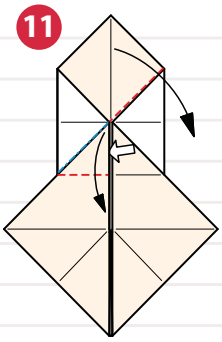


Squash fold.



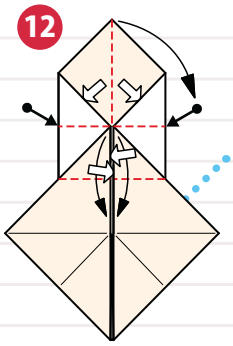
Crease and open out to the state shown in step 8.

11

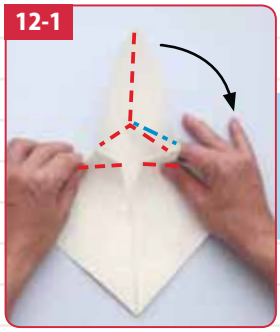


Fold the other part in the same way (9–10) and return to the state shown in step 8.

12



12-1

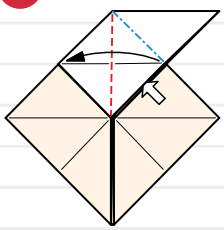


Pull the corners down while squashing the sides flat.

12-2

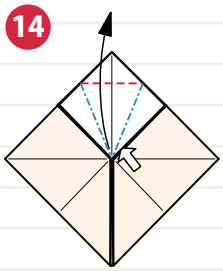
Close the center flap and pivot to the right.

13



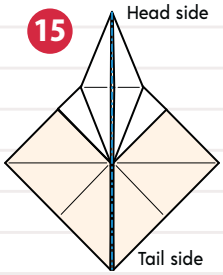
Squash fold.

14



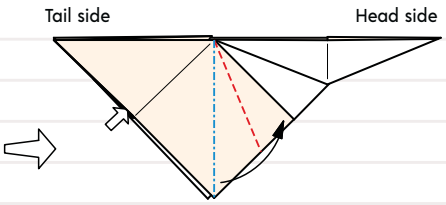
Petal fold.

15



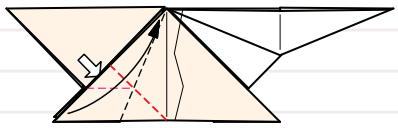
Mountain fold in half and turn the model 90 degrees clockwise.

16

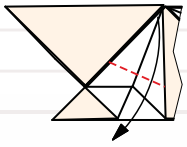


Pull the corner over and squash flat. Repeat behind.

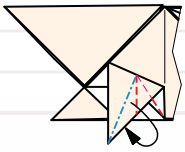
17



18

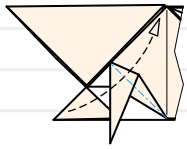


19



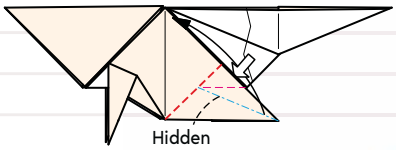
Swivel fold.

20



Fold the other part in the same way (17–19).

21



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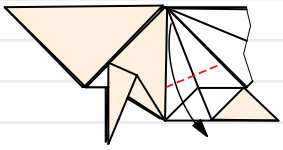
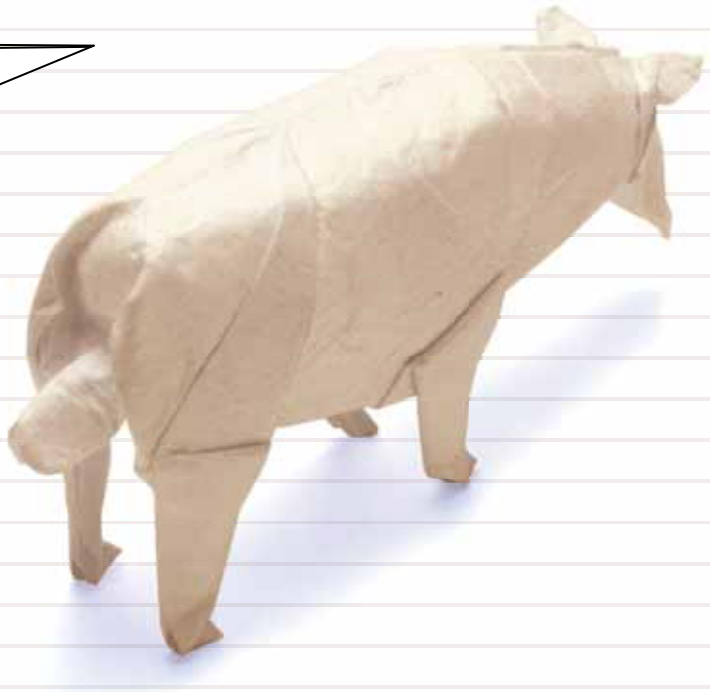
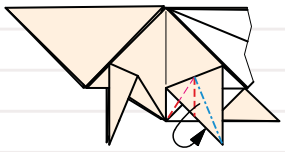


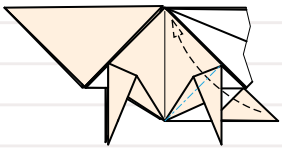


23



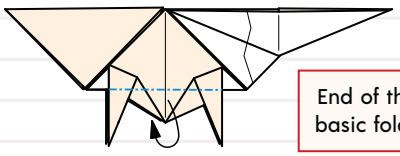
Swivel fold.

24



Fold and tuck inside.
Repeat on the other side.

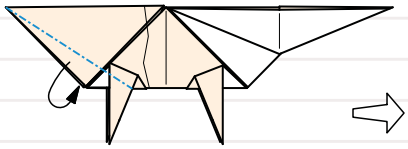
25



End of the basic folds

Fold and tuck inside.
Repeat on the other side.

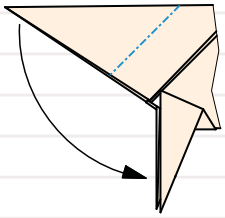
26



Fold and tuck inside.
Repeat on the other side.

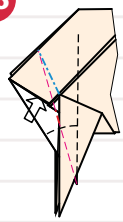
Start applying glue on the non-visible back sides, as well as the front side of the ear and head

27



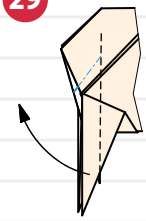
Inside reverse fold.

28



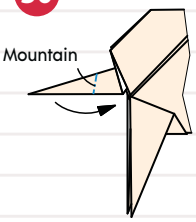
Swivel in the sides.

29



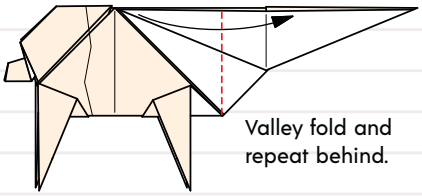
Inside reverse fold up.

30



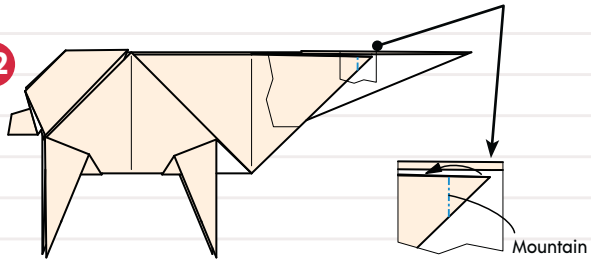
Inside reverse fold.

31



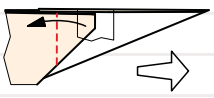
Valley fold and repeat behind.

32

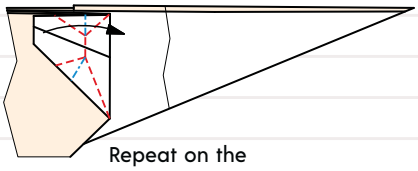


Inside reverse fold the tip. Repeat behind.

33

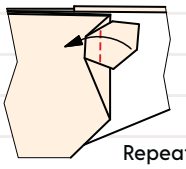


34



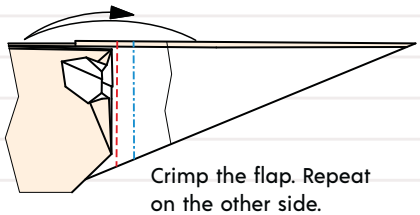
Repeat on the other side.

35



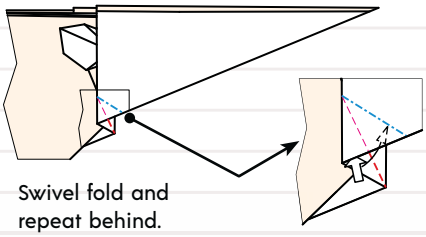
Repeat on the other side.

36



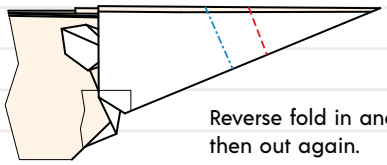
Crimp the flap. Repeat on the other side.

37



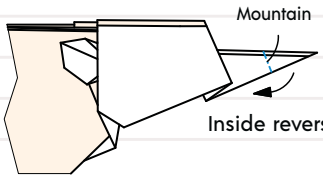
Swivel fold and repeat behind.

38



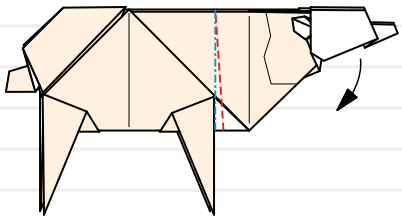
Reverse fold in and then out again.

39

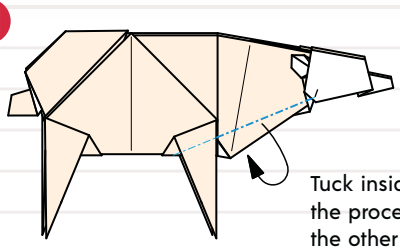


Inside reverse fold.

40

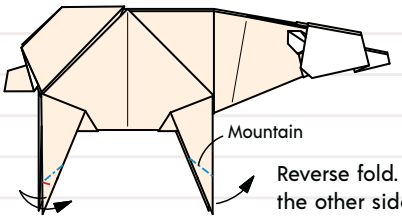


41



Tuck inside. Repeat the procedure on the other side.

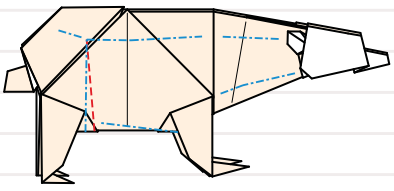
42



Reverse fold. Repeat on the other side.

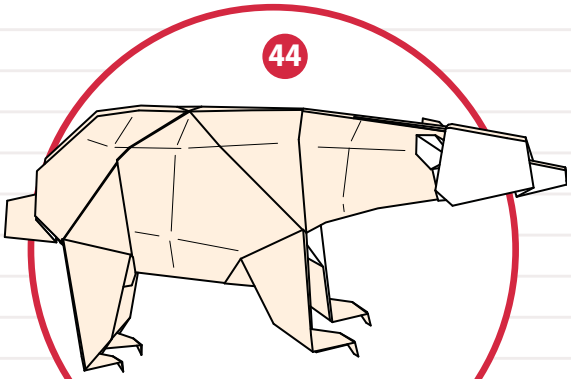
Heel fold. Repeat on the other side.

43



Add mountain fold to make the body three-dimensional.

44



Fine-tune the shape, and you're done.

Difficulty: ★★★½

WALRUS

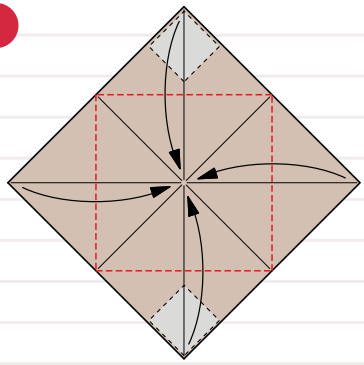
Type of paper used:

- Handmade Washi
- 12¼ x 12¼ inch (31 x 31 cm)
- 1 sheet

Folding Tips

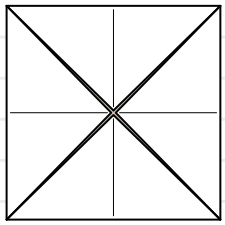
Reinforcing the front flippers will make the model more sturdy. Steps 10–13 demonstrate a technique that you will use again when forming the claws of the Crocodile (page 58), albeit on a much smaller scale. Step 25 contains a series of photos to show you how to take the Preliminary Base through its paces. Step 35 features a sink, which is described in detail at the top of page 9. During step 43, carefully suggest the shape of each eye when crimp folding to make the final product look more realistic and three-dimensional.

1



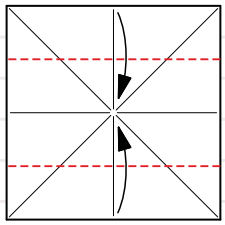
Glue two pieces of reinforcing paper onto the edges of the back side (around 1/5th of the side length each). Refer to Polar Bear (page 31, step 1).

2



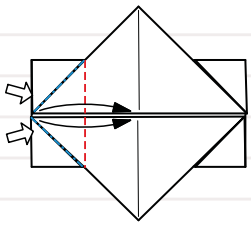
Turn over.

3



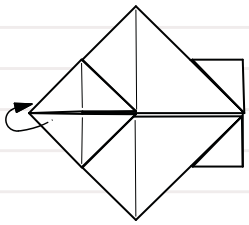
Fold the sides to the center, allowing the flaps to come out from behind.

4



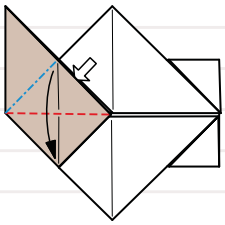
Squash fold the corners.

5

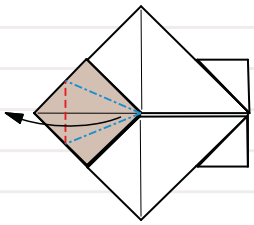


Wrap the flap around from behind and flatten.

6

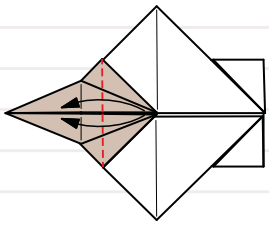


7

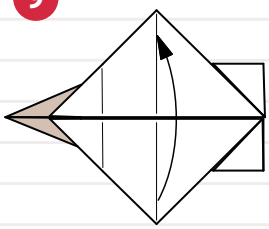


Petal fold (page 10).

8

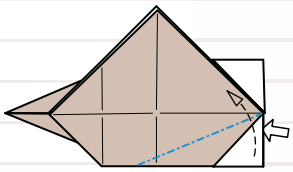


9



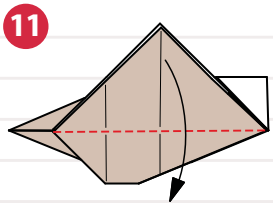
Fold up the one layer.

10



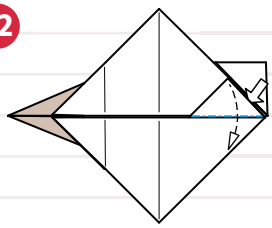
Inside reverse fold along the angle bisector.

11



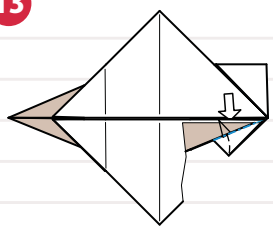
Open in the direction of the arrow and fold.

12



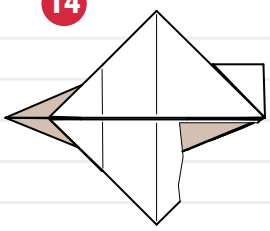
Inside reverse fold.

13

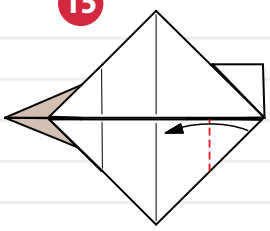


The front layer is omitted from steps 13–14 for clarity. Inside reverse fold.

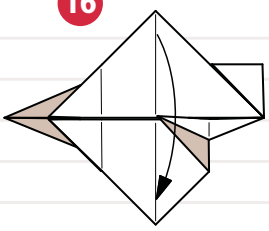
14



15

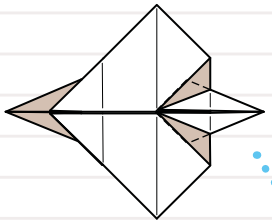


16



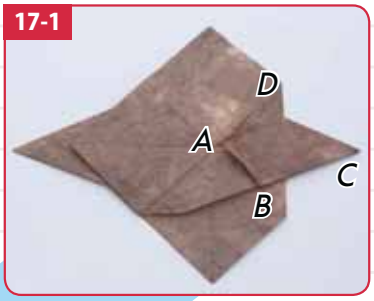
Repeat steps 9–15 on the top flap.

17



Wrap the back flap around from behind. Turn over first for clarity.

17-1

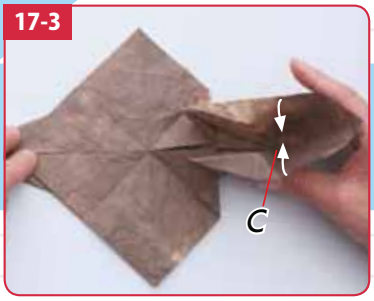


This photo depicts the diagram in step 17 from the back side. Release the trapped layers of ABCD and invert the flaps.

17-2

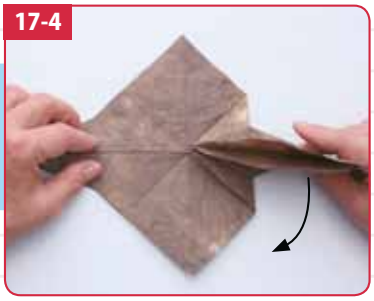
The inversion in process. Point C will become concave.

17-3

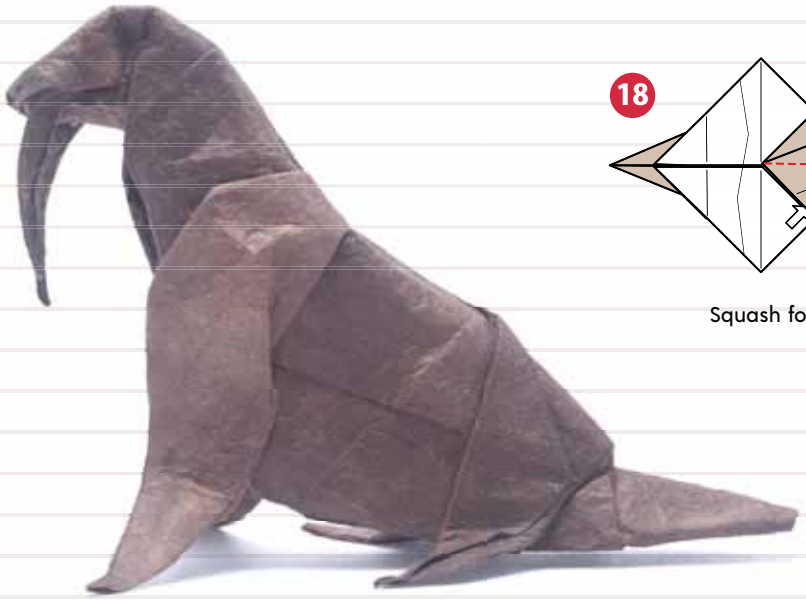


Push the sides together and push downward.

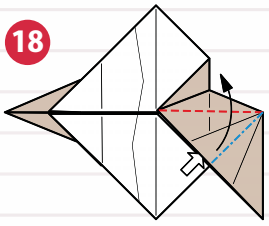
17-4



Fold the flap down.

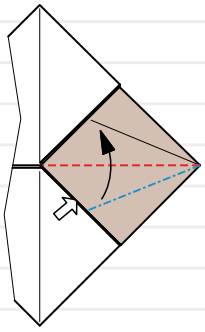


18



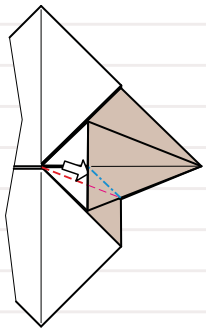
Squash fold.

19

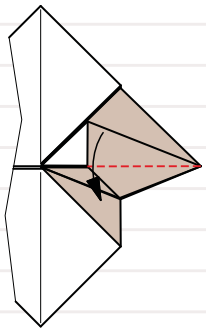


Squash fold.

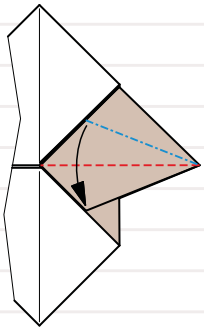
20



21

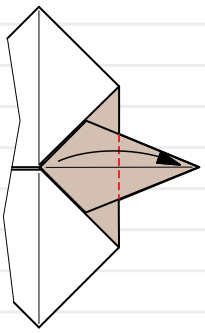


22



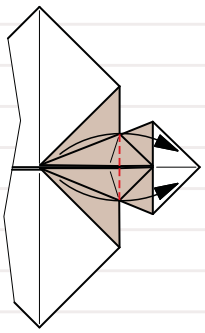
Repeat steps 19–21 at the top.

23



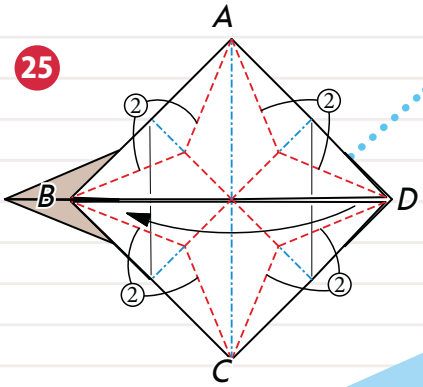
Valley fold the top flap.

24



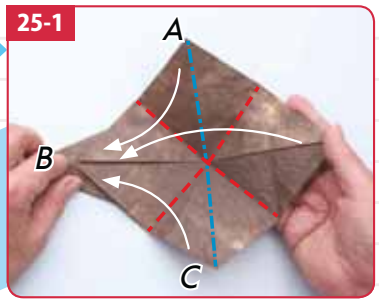
Valley fold the top flaps.

25



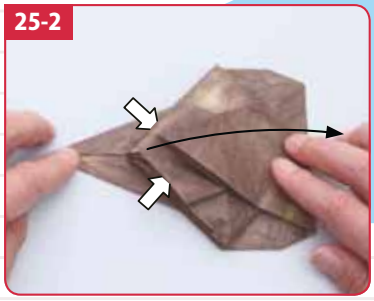
Form square ABCD into a Preliminary Base, and then reverse fold along the lines labeled "2."

25-1



Valley and mountain fold accordingly to fold into a square shape.

25-2

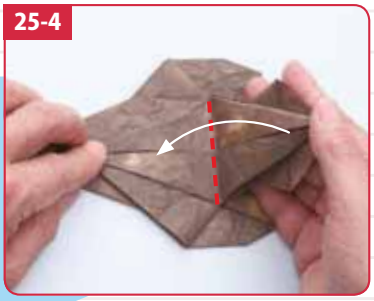


Open up in the direction of the arrow.

25-3

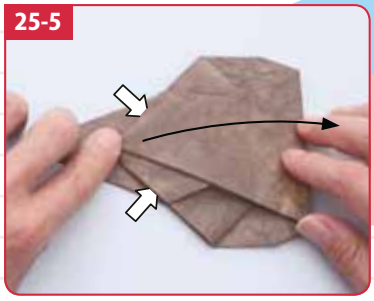
Petal fold.

25-4



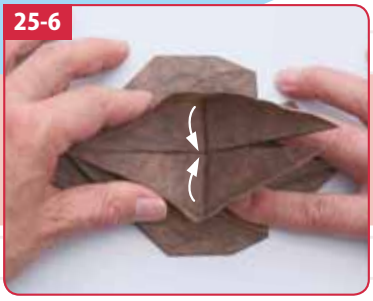
Fold.

25-5



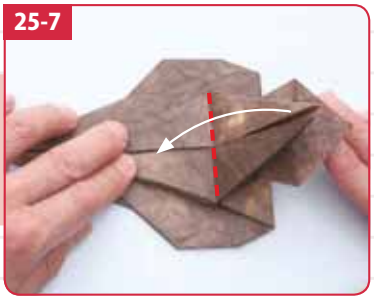
Open up the lower flap from 25-2.

25-6



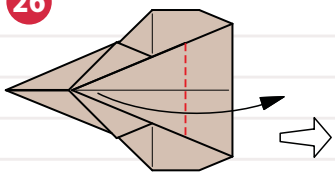
Petal fold.

25-7

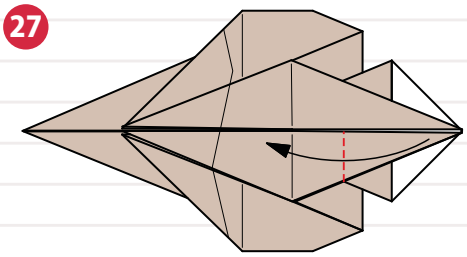


Fold.

26



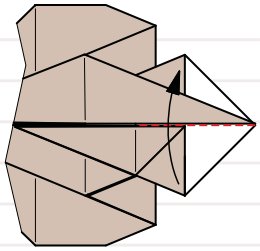
27



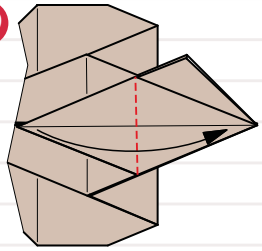
End of the basic folds

Start applying glue on the non-visible back sides

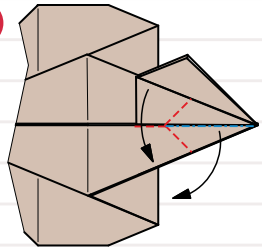
28



29

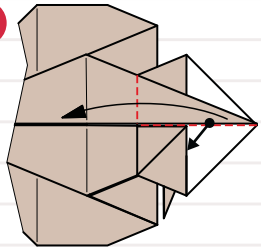


30



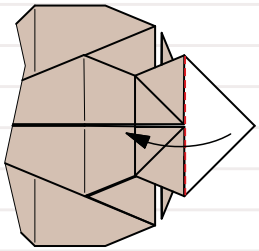
Fold down while reverse folding the flap.

31

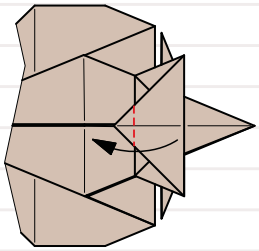


Repeat steps 27–30 at the top.

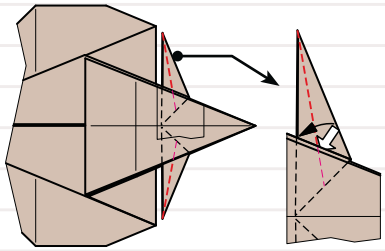
32



33

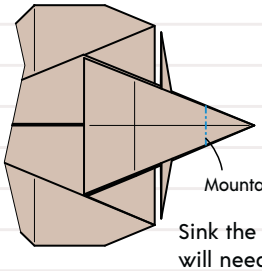


34



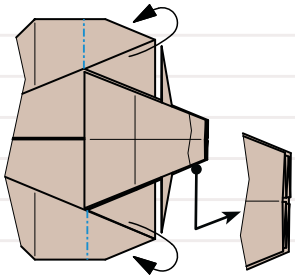
Thin the tusks by valley folding. Fold the other flap and back side in the same way.

35

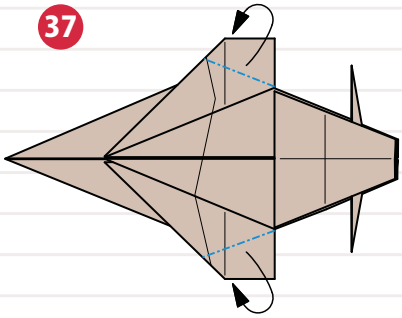


Sink the tip of the flap. You will need to temporarily unfold the side flaps to allow this flap to spread apart.

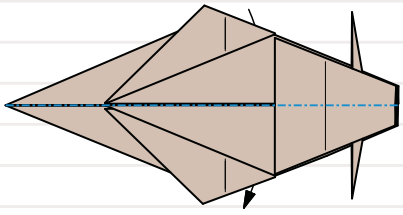
36



37

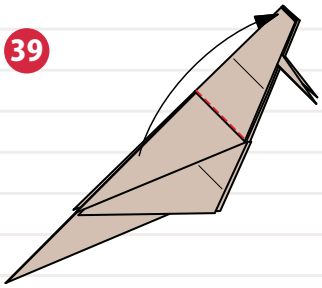


38



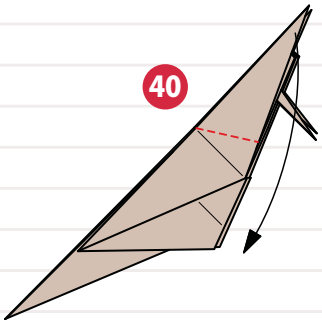
Mountain fold in half. Rotate the model slightly.

39

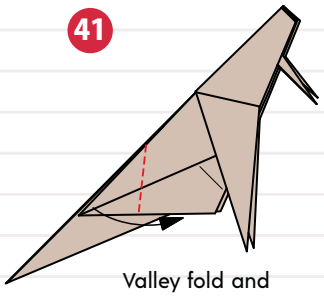


Valley fold and repeat behind.

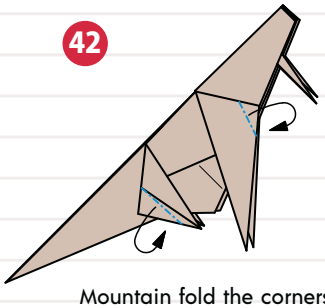
40



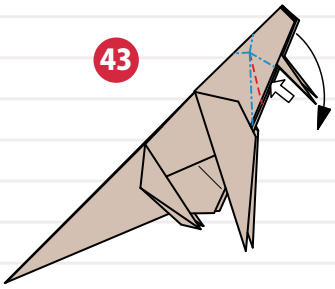
Valley fold and repeat behind.



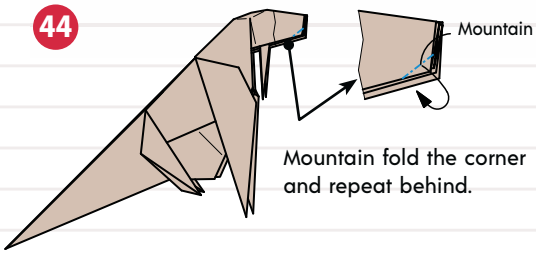
Valley fold and repeat behind.



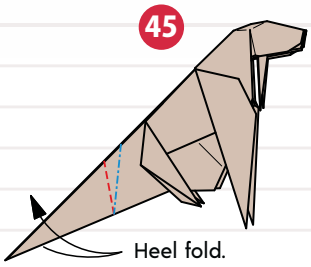
Mountain fold the corners and repeat behind.



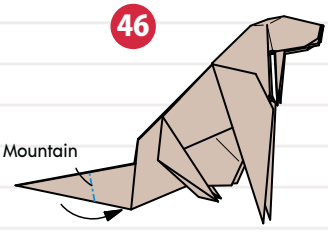
Crimp the head down, leaving a gap from the edge, encouraging it to assume a three-dimensional shape.

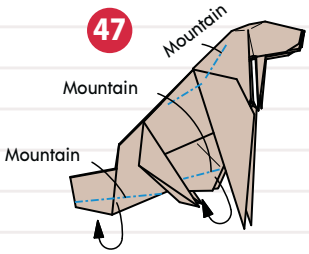


Mountain fold the corner and repeat behind.

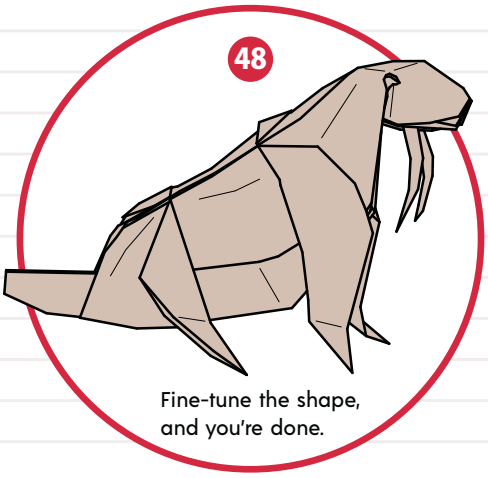


Heel fold.





Mountain fold the edges and repeat behind. Round out the body with mountain folds.



Fine-tune the shape, and you're done.

Difficulty: ★★☆

MANTA RAY

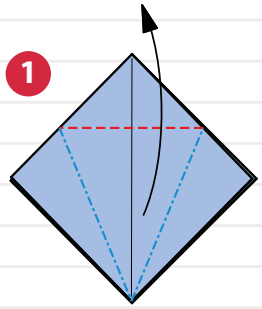
Type of paper used:

- Handmade Washi
- 9 x 9 inch (23 x 23 cm)
- 1 sheet

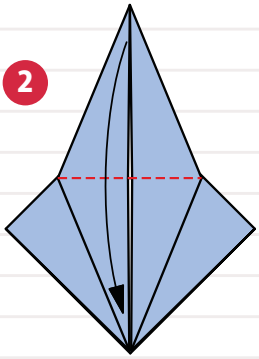
Folding Tips

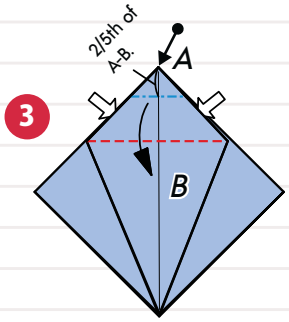
During a visit to an aquarium, I discovered that manta rays have dorsal fins, and managed to incorporate this into a refined version of my original Manta Ray design. Begin this model by folding the Preliminary Base, and then squash the edges to recreate the pectoral fins. If opting to apply glue, refer to the Blue Whale Calf (page 22) after step 10, spreading the glue on the inner part of the squashed edges. Step 30 is performed in order to keep the tail from pointing downward. Use a pushing motion to modify the angle, but take care not change the shape of the dorsal fin, which should appear at the root of the tail.

Start from the Preliminary Base (page 10)

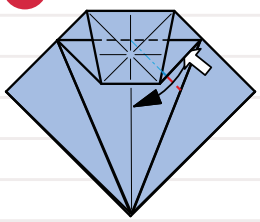


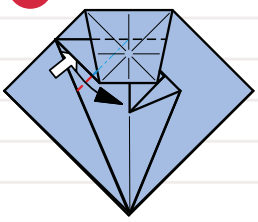
Petal fold the top flap only.



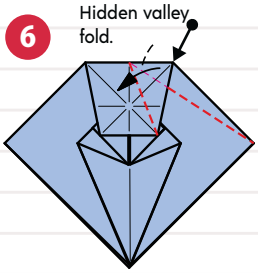


Squash in the direction of the dot-terminated arrow.

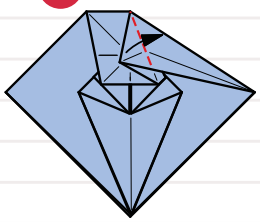


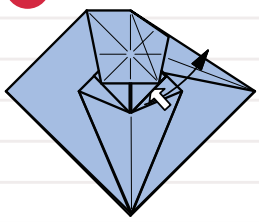


Repeat on the side other side.

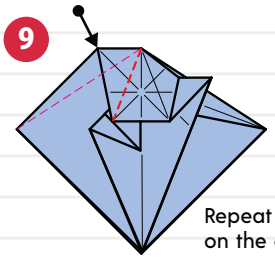


Squash in the direction of the dot-terminated arrow.

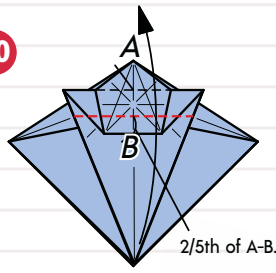




Undo the reverse fold from step 4.

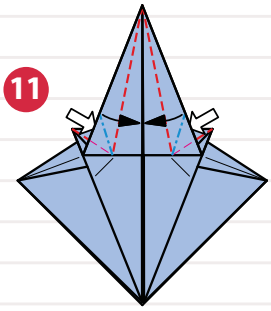


Repeat steps 6 – 8 on the other side.

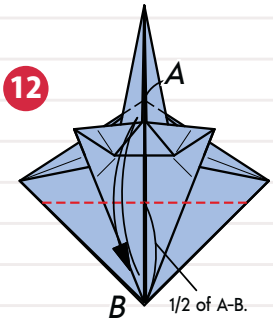


End of the basic folds

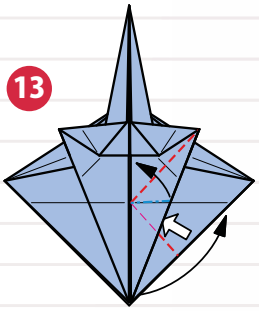
Start applying glue on the back sides in steps 3 and 6



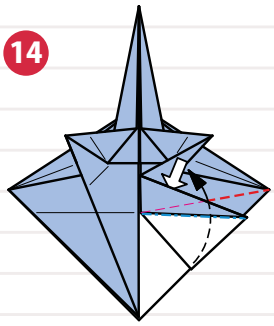
Valley fold the sides in while squashing the corners.



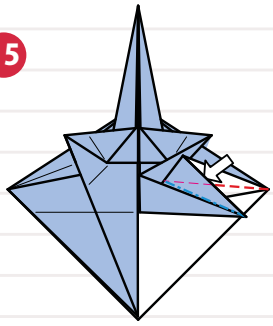
Valley fold and unfold.



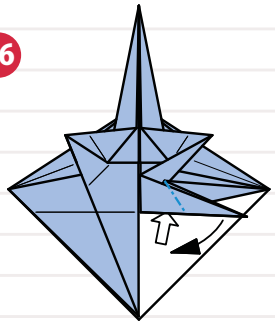
14



15

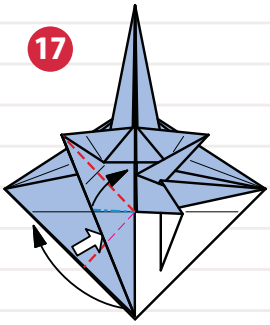


16



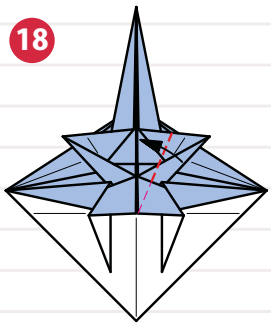
Reverse fold, leaving the distribution of the layers as one at the top and the rest at the bottom.

17

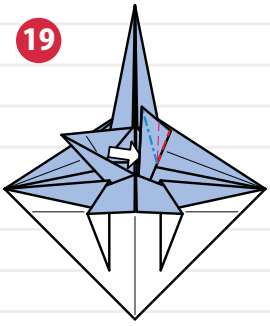


Repeat steps 13–16 on the other side.

18

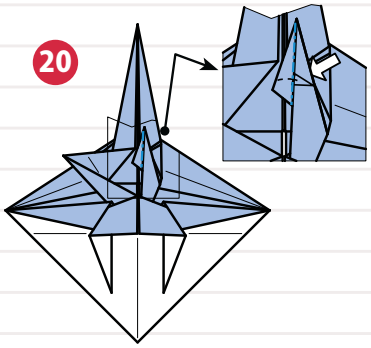


19



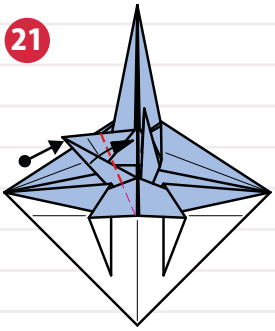
Inside reverse fold.

20



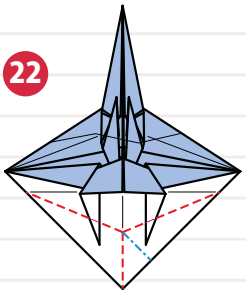
Reverse fold the edge back out.

21



Repeat steps 18–20 on the other side.

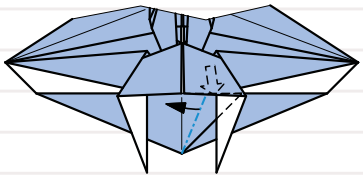
22



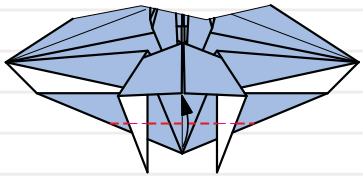
Rabbit ear fold.

Apply glue

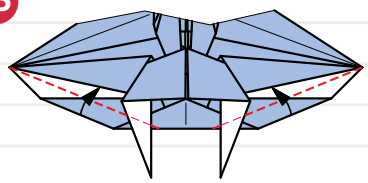
23



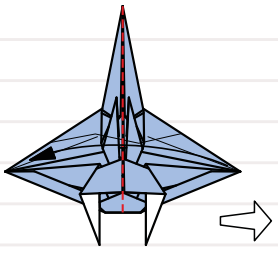
24



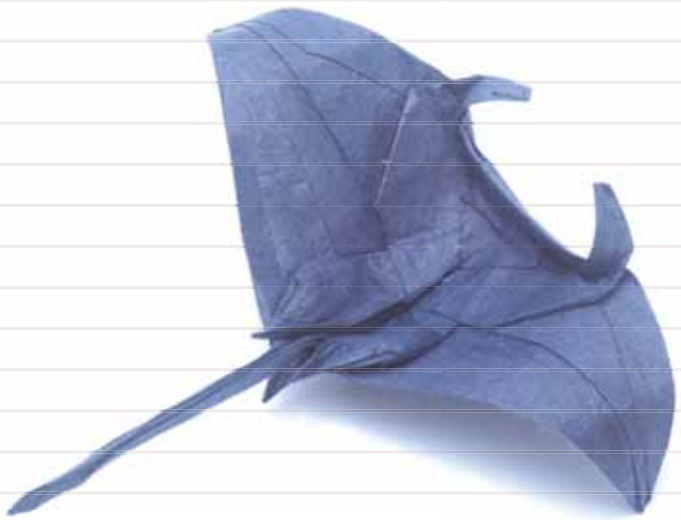
25



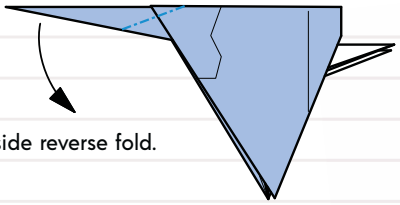
26



Valley fold across the middle, and then rotate.

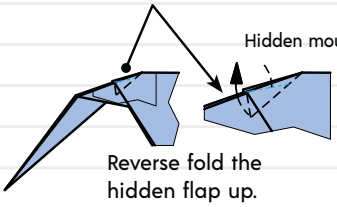


27



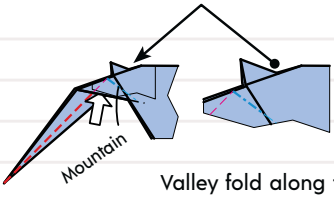
Inside reverse fold.

28



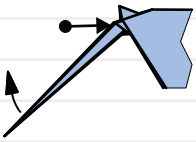
Reverse fold the hidden flap up.

29



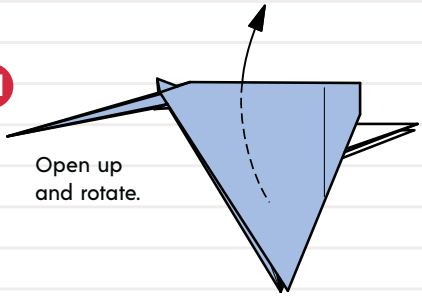
Valley fold along the tail, swiveling in by the body. Repeat on the other side.

30



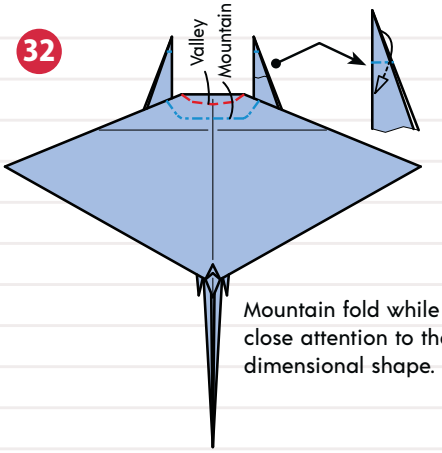
Push inside, following the direction of the dot-terminated arrow.

31



Open up and rotate.

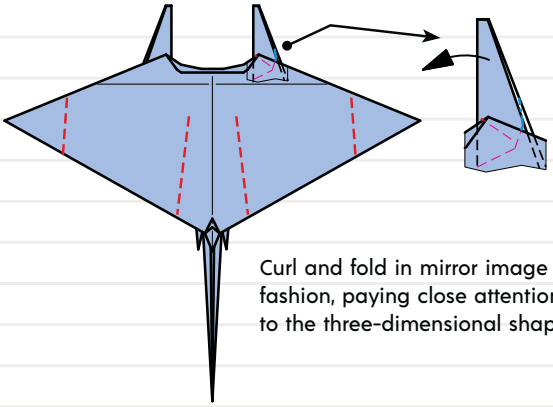
32



Inside reverse fold and repeat on the other side.

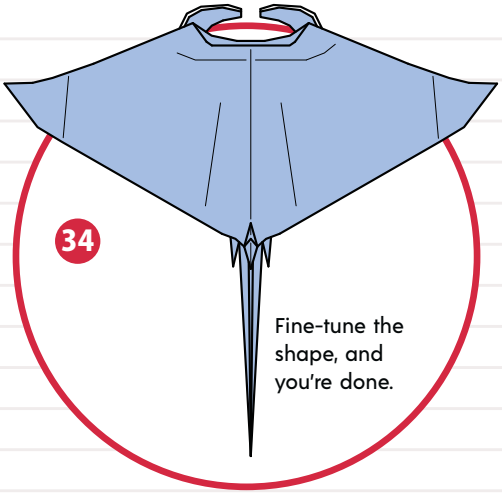
Mountain fold while paying close attention to the three-dimensional shape.

33



Curl and fold in mirror image fashion, paying close attention to the three-dimensional shape.

34



Fine-tune the shape, and you're done.

Difficulty: ★★

SWORDFISH

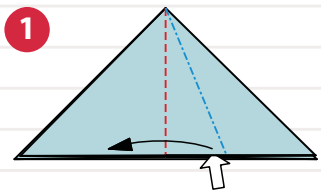
Type of paper used:

- Handmade Washi
- 9 x 9 inch (23 x 23 cm)
- 1 sheet

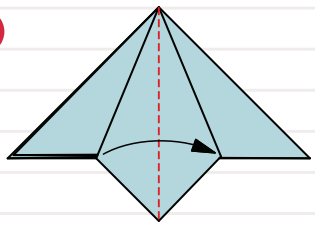
Folding Tips

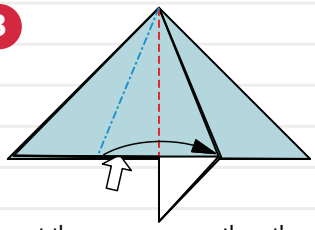
Refer to the Waterbomb Base instructions (page 11) when starting this model, which is relatively simple compared to others in the book. Step 18 requires a valley fold across the middle, causing the back to be visibly open. This is not ideal, but it's necessary in order to make the folding procedure much simpler. In this book, the Goldfish (page 54) and the Penguin (page 14) also apply this technique. Step 22 is performed by reverse folding the second dorsal fin. When it comes to applying glue, I recommend that you start after step 22, returning the structure back to the state of step 11 as you apply glue to hidden surfaces and refold. In the case of fish, apply mountain folds to add volume to the body of the fish to make the final product look more three-dimensional. Mountain folding the upper jaw and opening up the lower jaw will result in an angular, kinetic look.

Start from the Waterbomb Base (page 11)

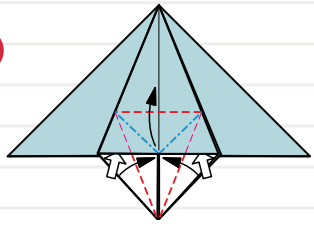


Open in the direction of the white arrow and squash fold.

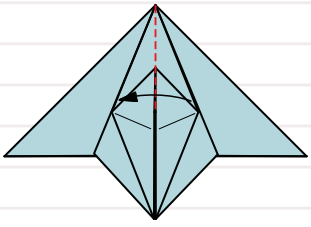




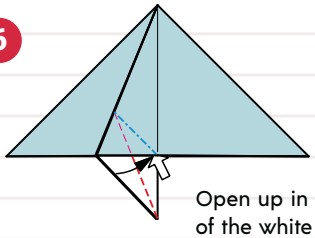
Repeat the sequence on the other side to make the model symmetrical.



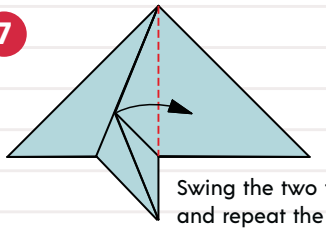
Petal fold.



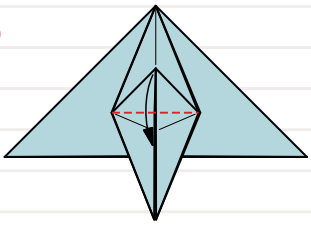
Swing two flaps over.

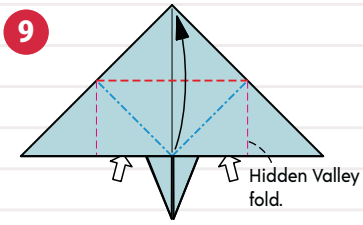


Open up in the direction of the white arrow and swivel fold.

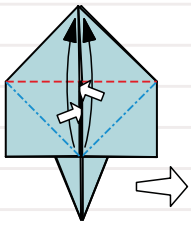


Swing the two flaps back and repeat the sequence on the other side to make the model symmetrical.

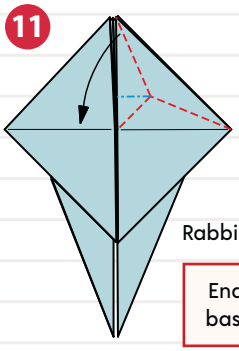




Petal fold.

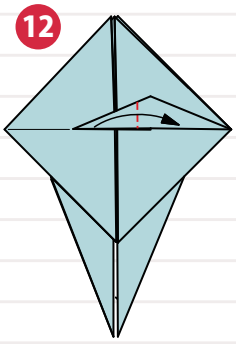


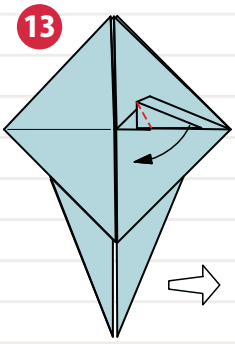
Squash fold the flaps up.

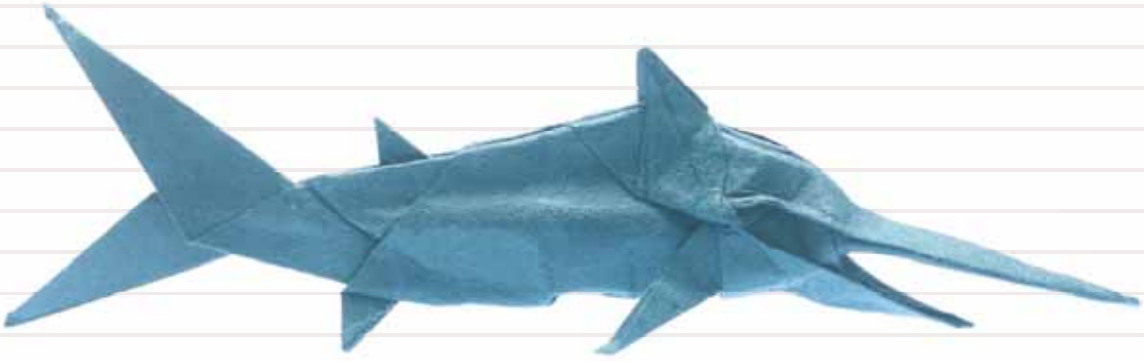


Rabbit ear fold.

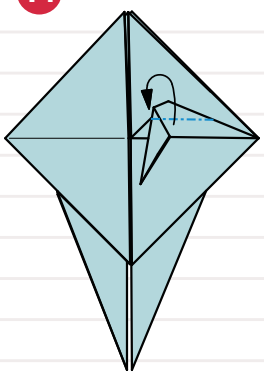
End of the basic folds



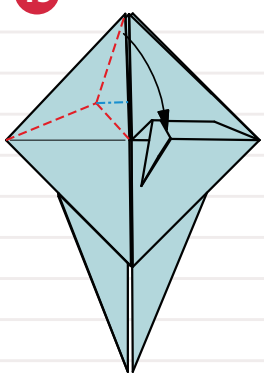




14

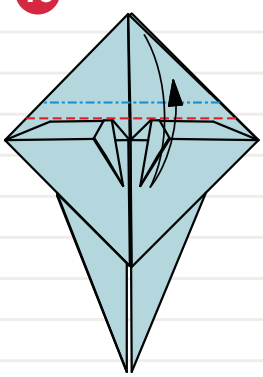


15



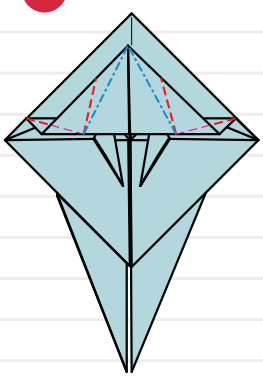
Repeat steps 11–14 on the other side.

16



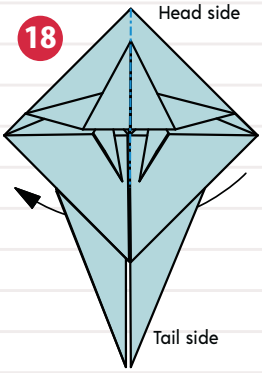
Pleat fold.

17



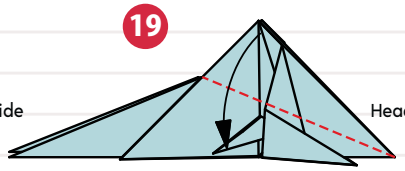
Swivel fold the sides behind.

18

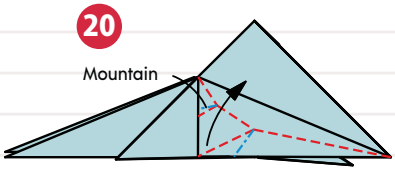


Mountain fold across the middle and rotate.

19

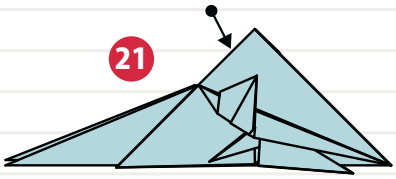


20



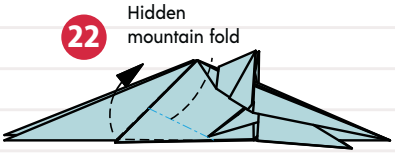
Fold the flap up and swivel in the sides.

21



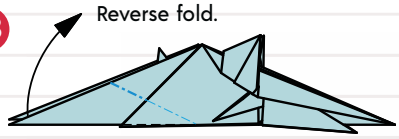
Repeat steps 19–20 behind.

22

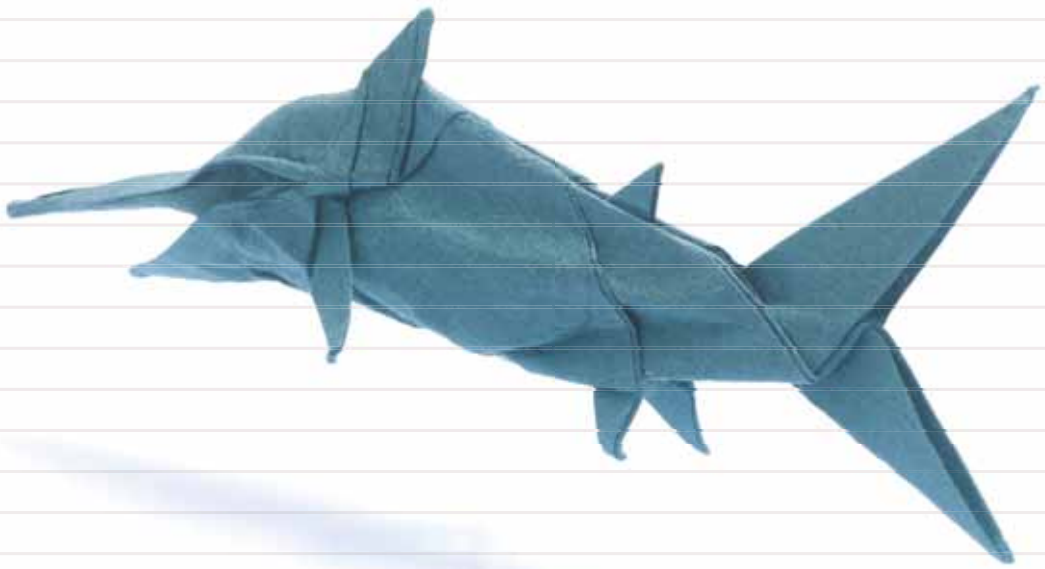


Reverse fold the hidden center flap up.

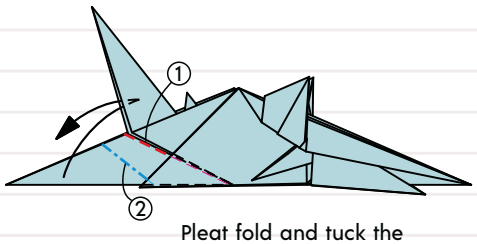
23



Start applying glue on the non-visible back sides

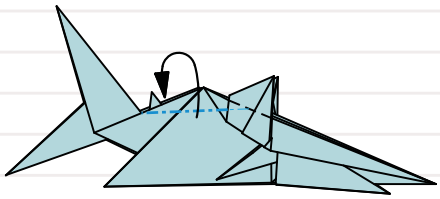


24



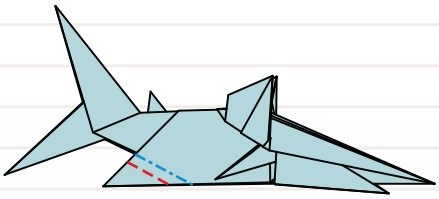
Pleat fold and tuck the upper tail fin inside.

25



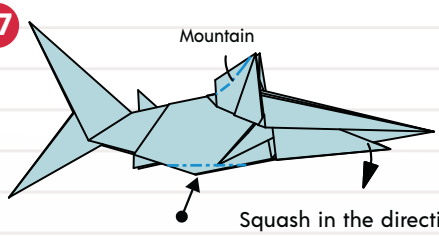
Tuck inside. Repeat on the other side.

26

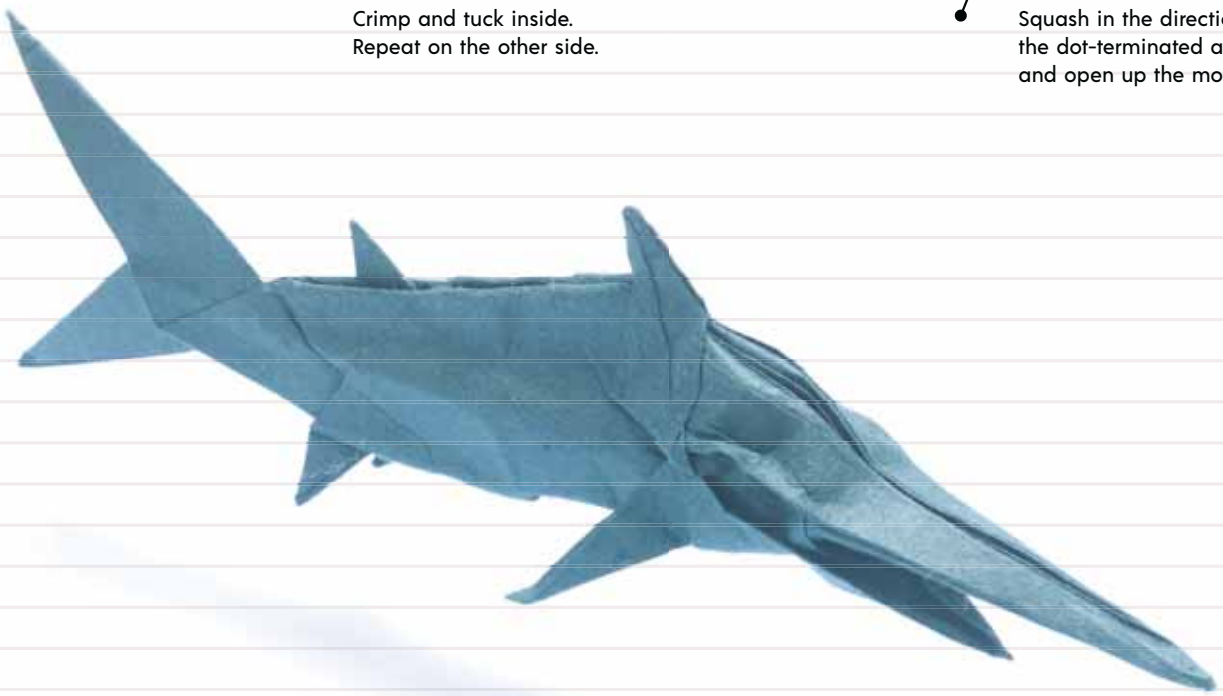


Crimp and tuck inside. Repeat on the other side.

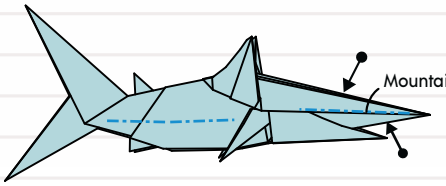
27



Squash in the direction of the dot-terminated arrow and open up the mouth.

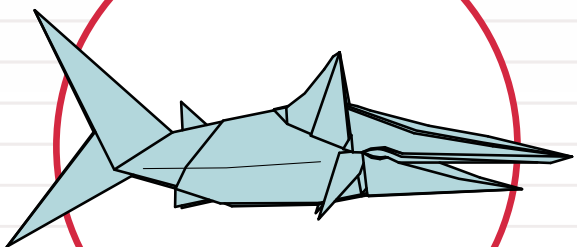


28



Squash in the direction of the dot-terminated arrows. Apply mountain folds to add volume to the body of the fish for a three-dimensional effect.

29



Fine-tune the shape, and you're done.

Difficulty: ★★★

SEAHORSE

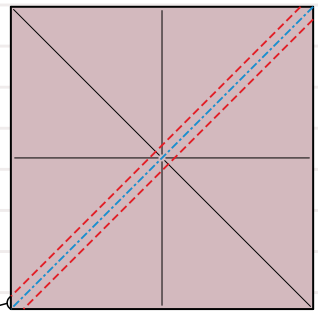
Type of paper used:

- Handmade Washi
- 9 x 9 inch (23 x 23 cm)
- 1 sheet

Folding Tips

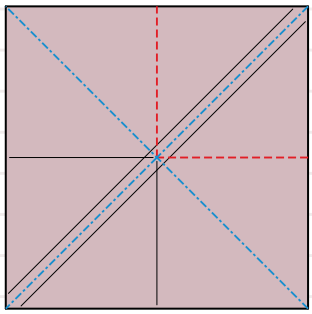
The dorsal fin details will be precreased at the outset. When completing the dorsal fin at step 9, it is important to apply glue thoroughly to preserve the shape. However, step 22 will require further small folds to the dorsal fin, so do not apply glue to the inner face. The fold at step 18 is a little unusual, but it is performed by making an indent with your fingernails, while alternating mountain and valley folds on both sides. This allows for the creation of a curving scalloped line, typical of a seahorse's back. When applying glue, note that the final product will look much more polished if you apply glue to all of the tiny folds as well. As a final step, adding some volume to the body will result in a three-dimensional look.

1



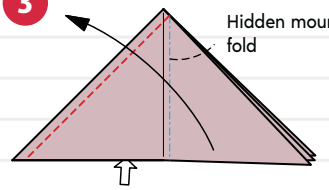
Alternate mountain and valley folds. See page 59 for an example of how to locate 1/24th of an edge.

2



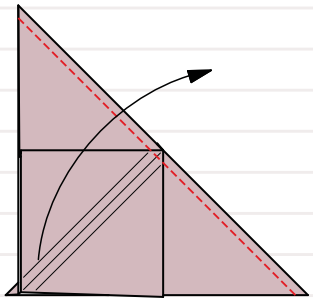
Form a Waterbomb Base with one flap swung to the other side.

3

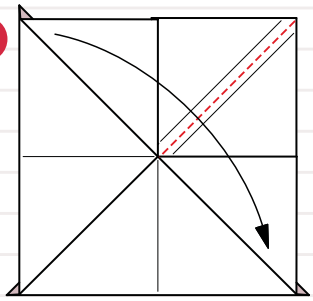


Open up in the direction of the white arrow and valley fold, squashing the middle flap over to the left.

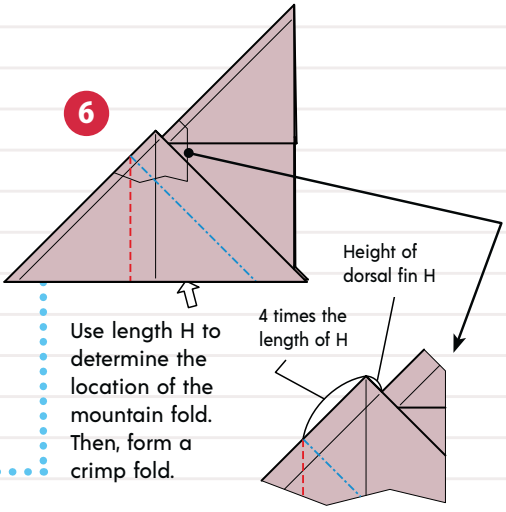
4



5

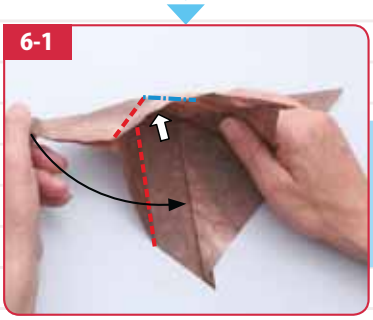


6



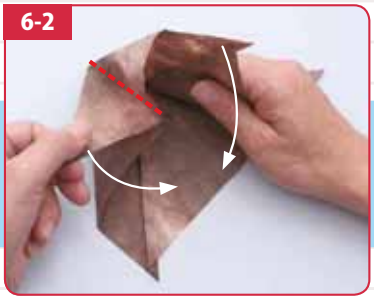
Use length H to determine the location of the mountain fold. Then, form a crimp fold.

6-1



Open up the sheet and fold.

6-2

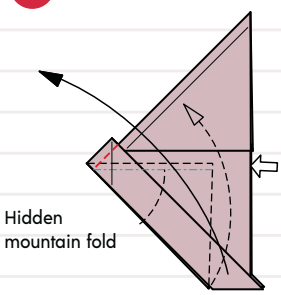


Valley fold in the direction of the arrows.

6-3

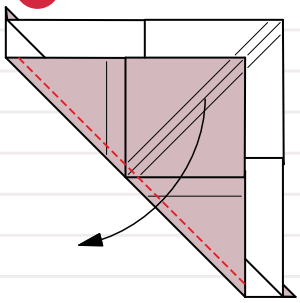
The paper after folding.

7

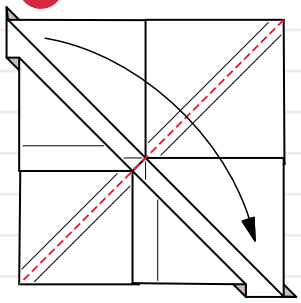


Open up in the direction of the white arrow and squash fold the middle flap.

8

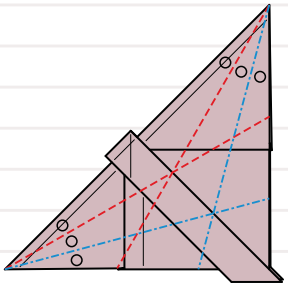


9

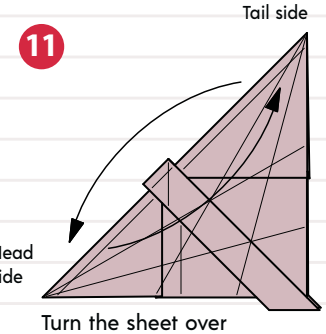


Start applying glue, excluding the back side of the dorsal fin

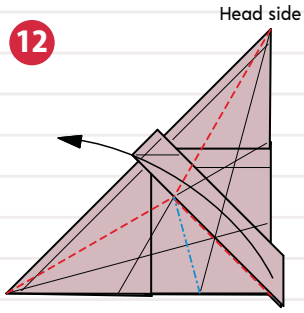
10



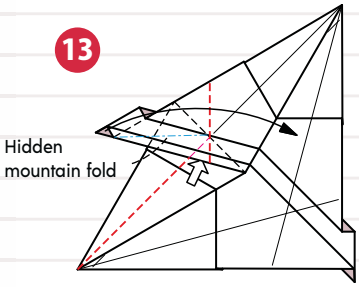
Alternate mountain and valley folds. Repeat on the other side.



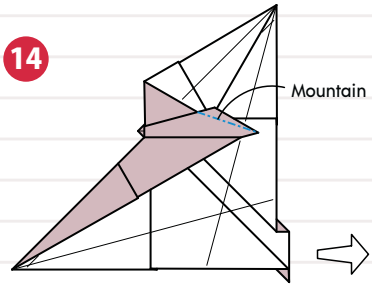
Turn the sheet over and rotate.

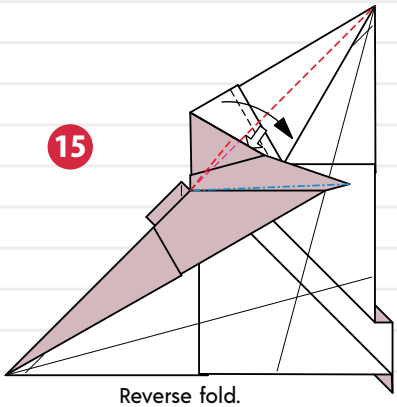


Rabbit ear the flap.

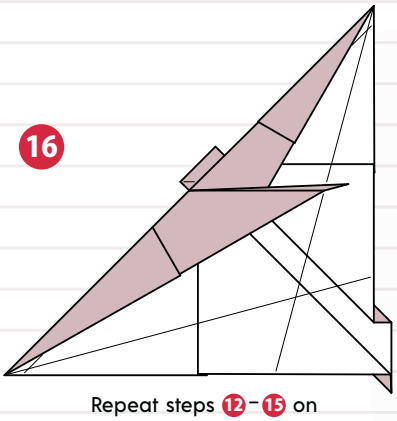


Squash fold. The hidden mountain fold will determine the angle of the flap.

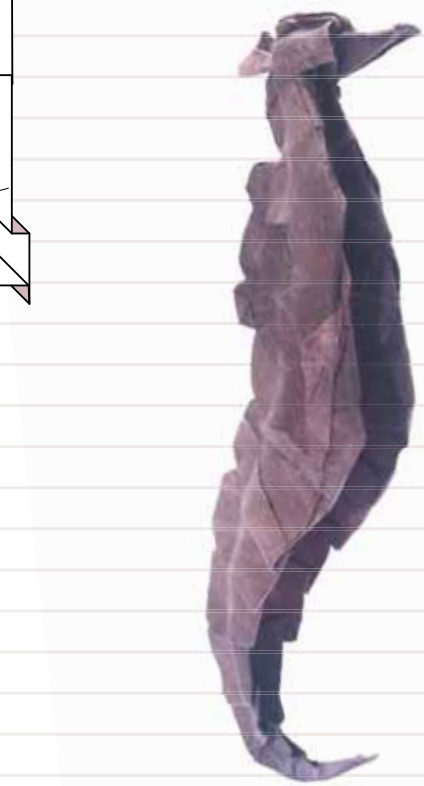


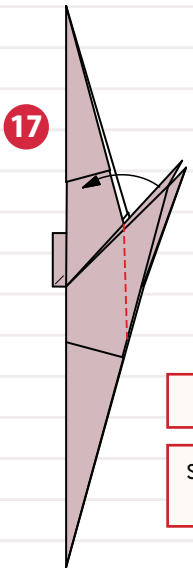


Reverse fold.



Repeat steps 12–15 on the other side. Rotate.

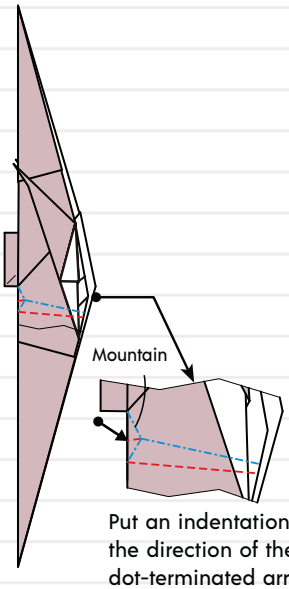




Fold the other side in the same way.

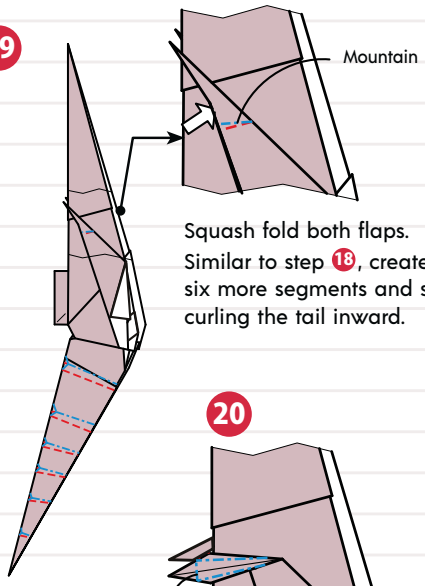
End of the basic folds

Start applying glue on the non-visible back sides



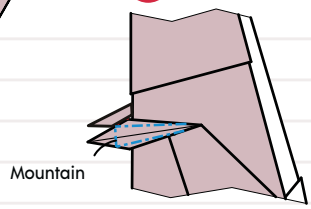
Put an indentation in the direction of the dot-terminated arrow.

19



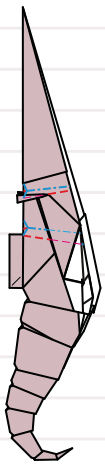
Squash fold both flaps. Similar to step 18, create six more segments and start curling the tail inward.

20



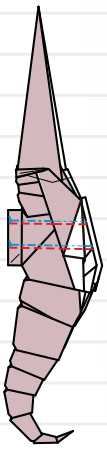
Mountain fold the edges of the flaps.

21



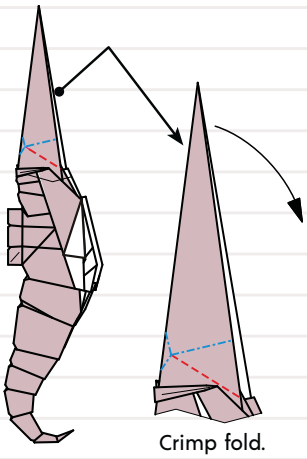
Similar to step 18, create two segments above the dorsal fin.

22



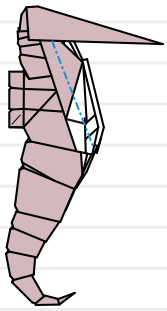
Similar to step 18, create two segments at the dorsal fin.

23

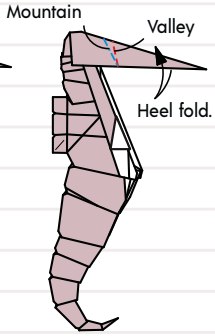


Crimp fold.

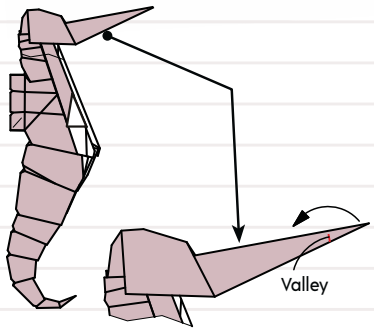
24



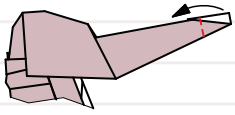
25



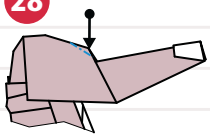
26



27

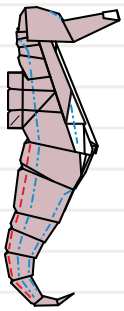


28



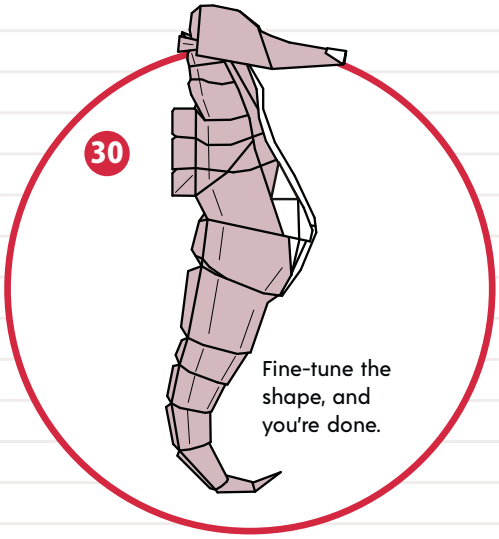
Press the corner flat.

29



Round the body with mountain folds to achieve a three-dimensional look.

30



Fine-tune the shape, and you're done.

Difficulty: ★★

GOLDFISH

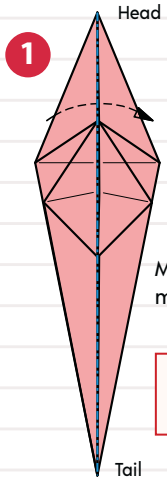
Type of paper used:

- Handmade Washi
- 9 x 9 inch (23 x 23 cm)
- 1 sheet

Folding Tips

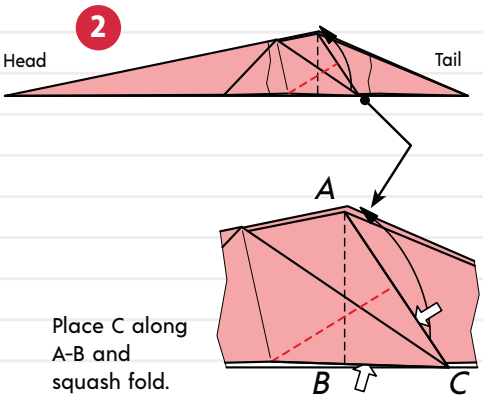
This model is fashioned after the fantail goldfish. Similar to the Swordfish (page 46), the back is visibly open. Step 14 is performed to create large fins. This method is not particularly difficult, but I added some photos for guidance, as the three-dimensional shape is important. When splitting the fins in step 22, valley folding the back will enhance the shape. When finishing this piece, use either cotton or crumpled tissue to fill the body to give it three-dimensionality. I recommend applying glue throughout the back, and allowing it to dry before filling it to maintain the original form of the model.

Start from the Dinosaur Base (page 11)

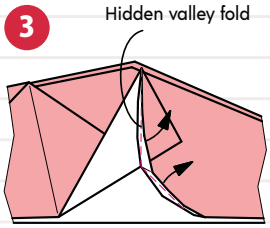


Mountain fold across the middle and then rotate.

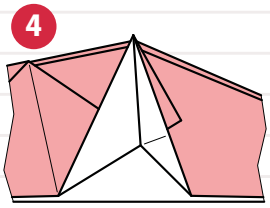
End of the basic folds



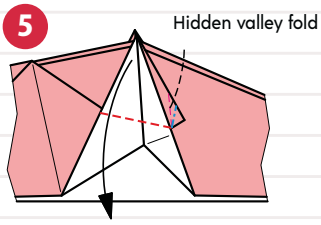
Place C along A-B and squash fold.



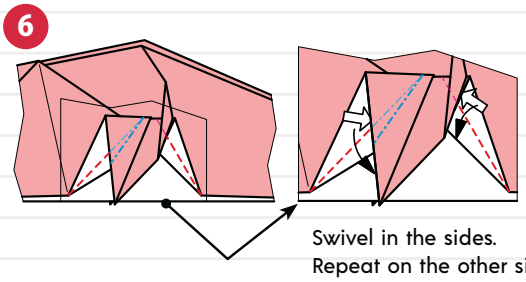
Step 2 in progress.



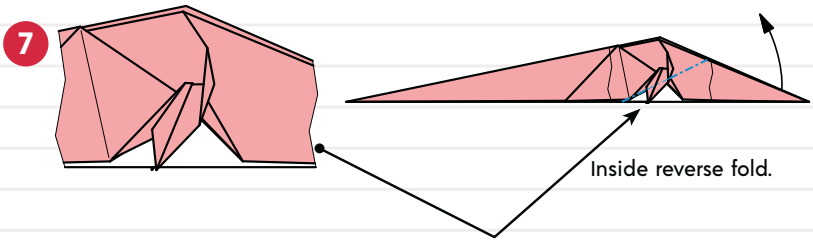
Repeat steps 2 - 3 on the other side.

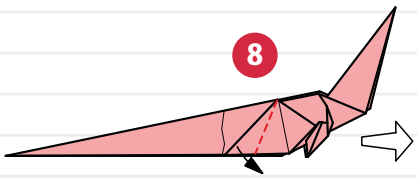


Valley fold. Repeat on the other side.

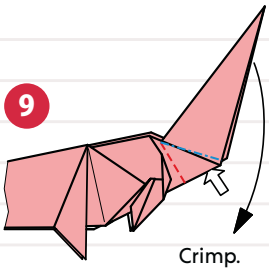


Swivel in the sides. Repeat on the other side.

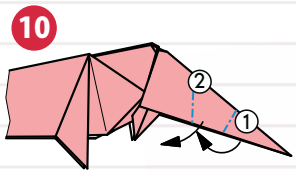


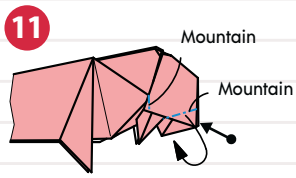


Valley fold. Repeat on the other side.

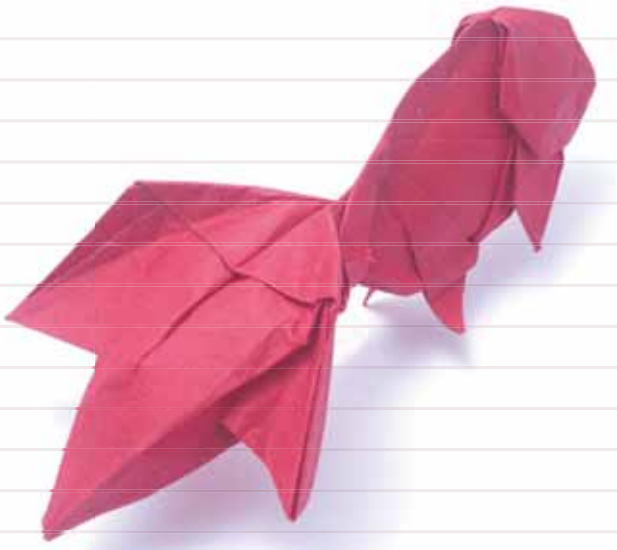


Crimp.

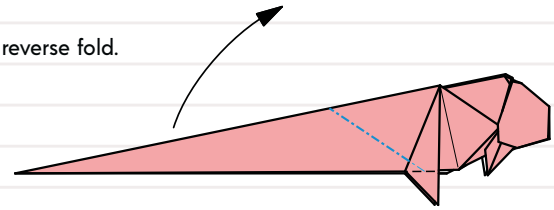




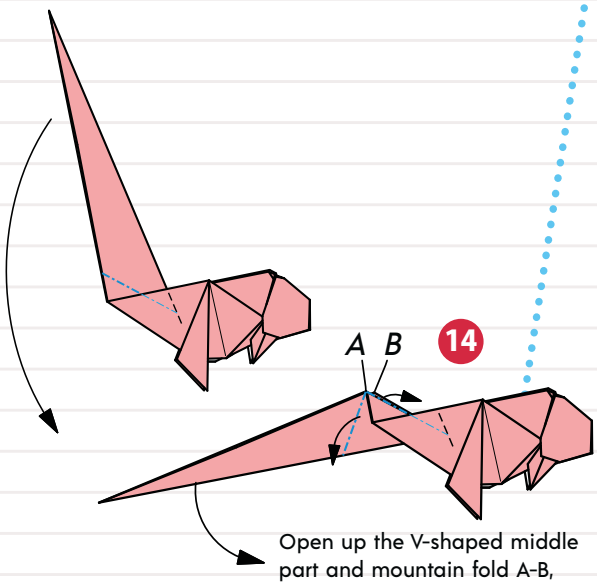
Tuck the flap in the direction of the arrow. Repeat on the other side.



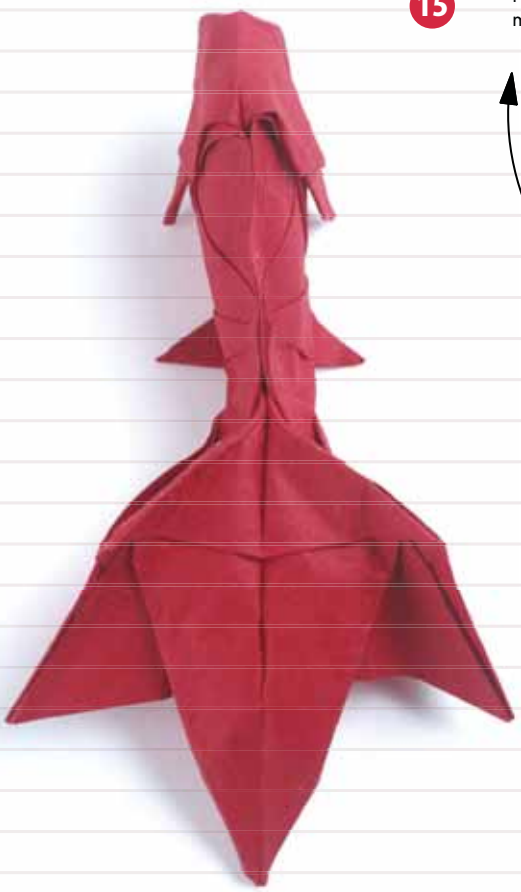
12 Inside reverse fold.



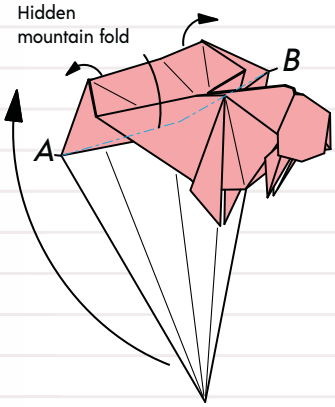
13 Inside reverse fold.



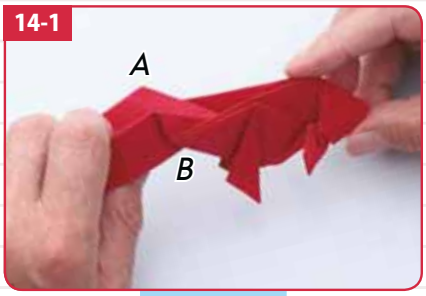
Open up the V-shaped middle part and mountain fold A-B, squash folding the flap.



15

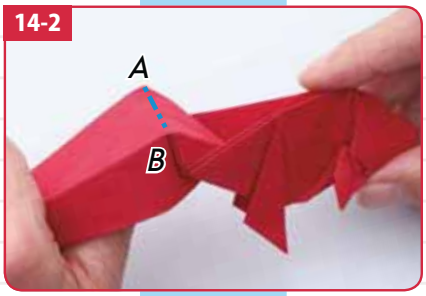


14-1



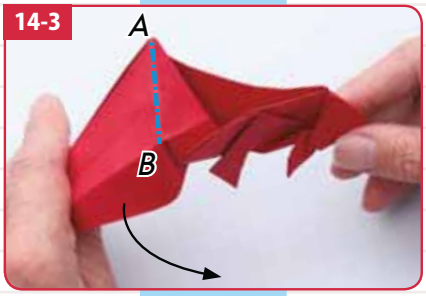
Insert a finger or thumb from the bottom.

14-2



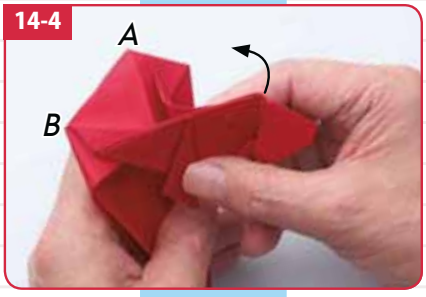
Mountain fold A-B.

14-3



Tilt the tip of the fin downward.

14-4

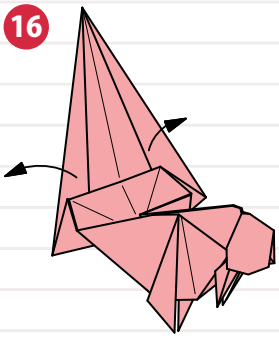


Fold.

14-5

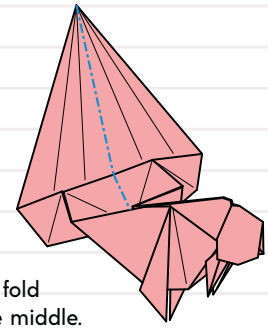
Step 14, complete.

16



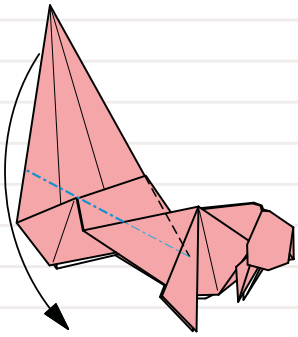
Open out the trapped layers at each side.

17



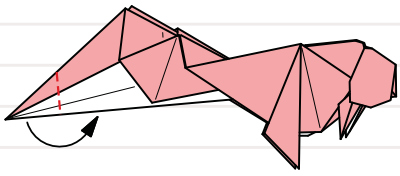
Mountain fold across the middle.

18



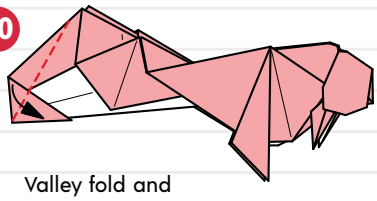
Inside reverse fold.

19



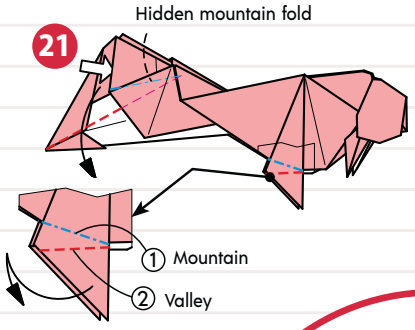
Start applying glue on the non-visible back sides

20

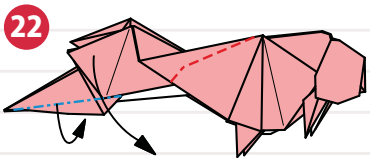


Valley fold and repeat behind.

21

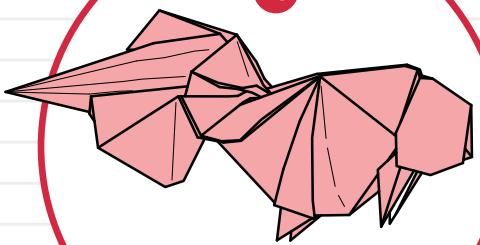


22



Hide with a mountain fold and repeat behind. Valley fold while opening up the fin.

23



Fine-tune the shape, and you're done.

Difficulty: ★★★★½

CROCODILE

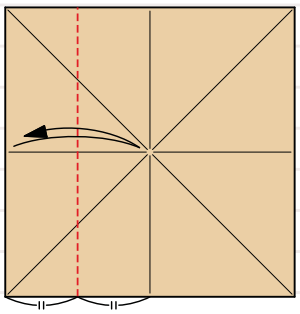
Type of paper used:

- Handmade Washi
- 12¼ x 12¼ inch (31 x 31 cm)
- 1 sheet

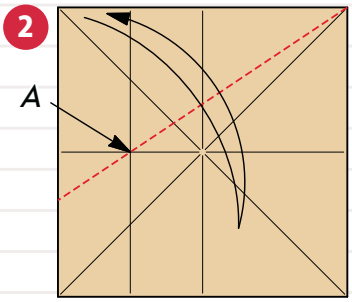
Folding Tips

This creation requires the application of a 24-division pleat fold. First, you'll make creases to divide the sheet into thirds. This is explained in detail in steps 1–3, but you can also judge it by eye. After the sheet has been divided into three both horizontally and vertically, add another 4 divisions by accordion folding to complete this crease pattern. This step is explained in detail on step 17 using a series of photos, so refer to this step when necessary. Pay particular attention to the details in steps 14 and 15, as precision there is critical. Step 27 is performed to make the body look three-dimensional. Shift the two valley folds closest to the middle, and pull in the closest mountain fold to the middle to achieve this.

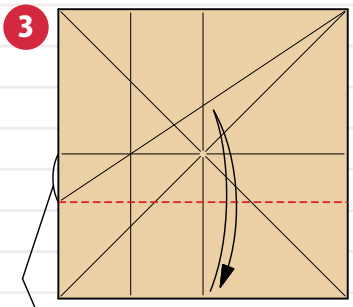
The realism of this model can be further enhanced by paying close attention to the details of the structure around the eyes.



Crease in half.

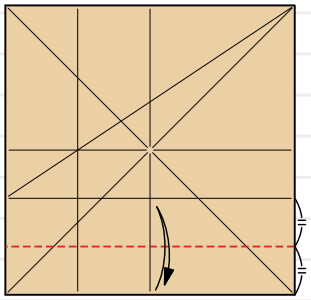


Form a crease that passes through point A.

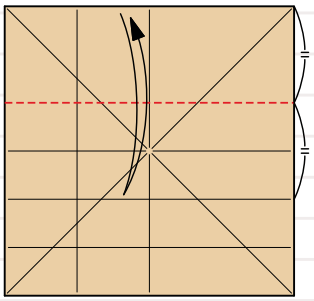


1/6th of the length of the sides.

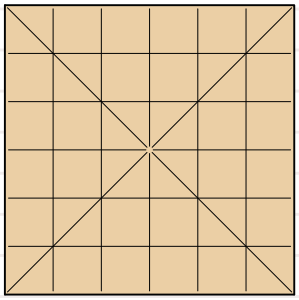
Make a horizontal crease starting from the lower end of the crease from step 2.

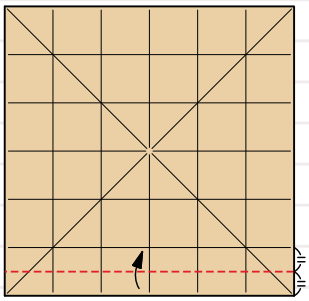


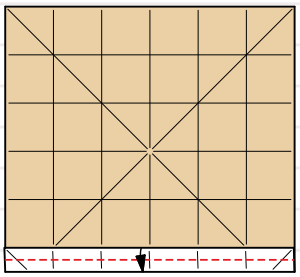
Crease in half.

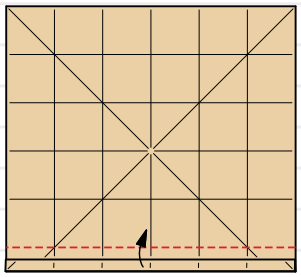


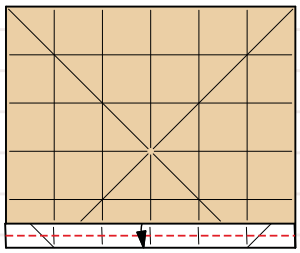
Crease the other three parts in the same way.

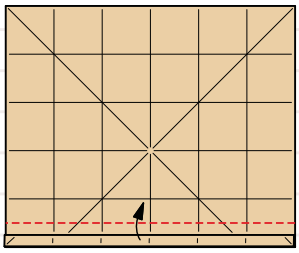




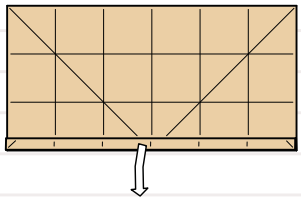




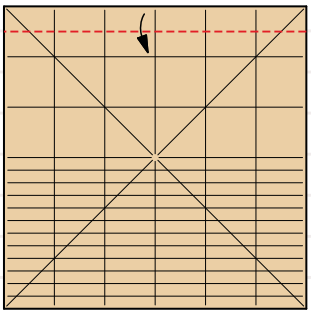




In this way (7–10), continue folding to the middle.

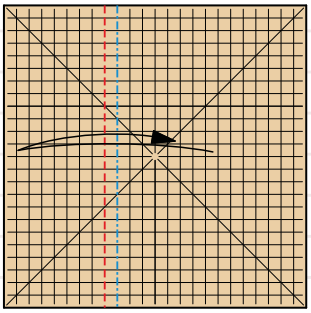


13



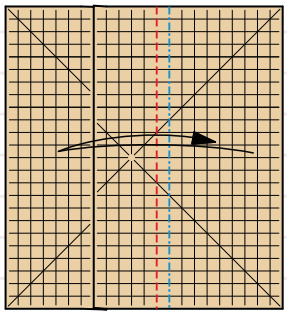
Fold the other three sections in the same way (8 – 12).

14



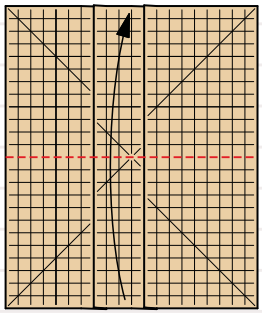
Pleat fold the fourth valley fold from the middle on the left and the third mountain fold from the middle on the left.

15

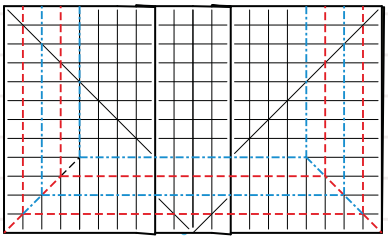


Pleat fold the second valley fold from the middle on the right and the third mountain fold from the middle on the right.

16



17



Fold the pleats.

17-1

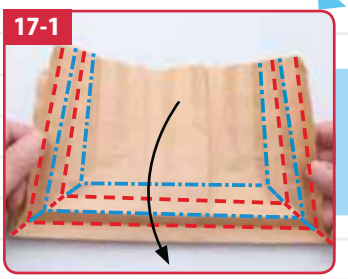
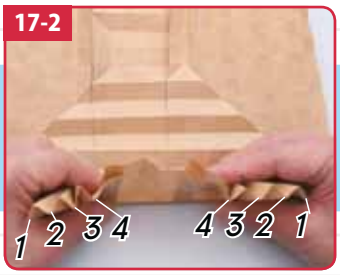


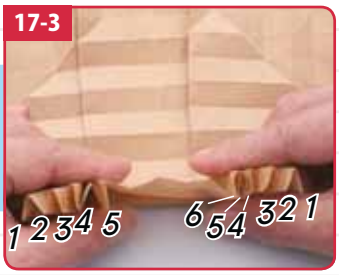
Illustration of the folding process.

17-2



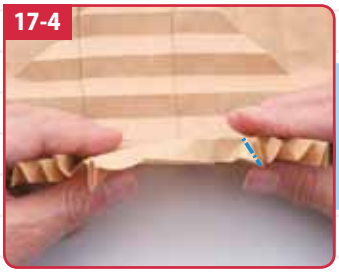
Four corners appear on either end of the bottom edge. Continue folding.

17-3



There now should be 5 corners on the left side and 6 on the right.

17-4

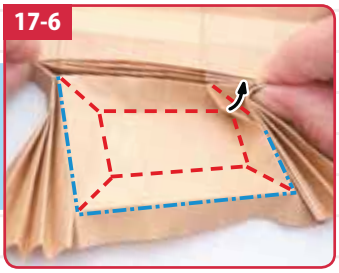


Mountain fold the fifth corner from the right at a 45 degree angle.

17-5

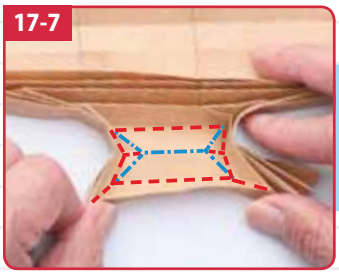
Likewise, mountain fold the fifth corner from the left at a 45 degree angle.

17-6



Pull one pleat over to the right and flatten. Sink the middle section.

17-7

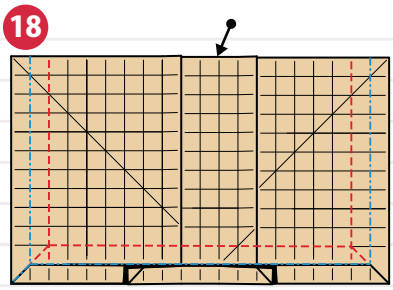


Sink fold.

17-8

The structure after folding.

18

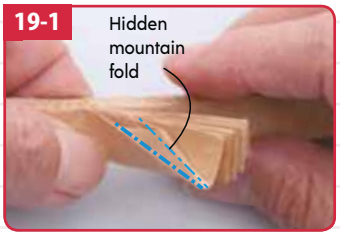


Repeat the same sequence on the other side.

19

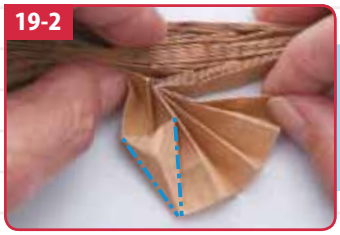
Squash fold the four corners

19-1



Mountain fold twice.

19-2



The structure after the mountain fold.

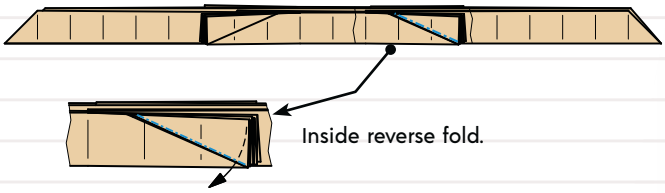
19-3

Valley fold.

19-4

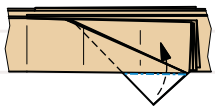
The structure after the valley fold.

20



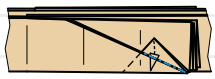
Inside reverse fold.

21



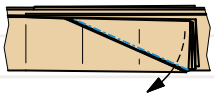
Inside reverse fold.

22



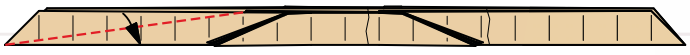
Inside reverse fold.

23



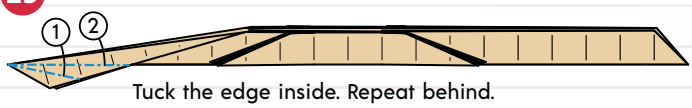
Fold the other eleven parts in the same way (20–22).

24



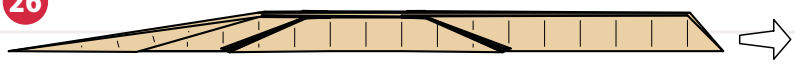
Valley fold down. Repeat behind.

25



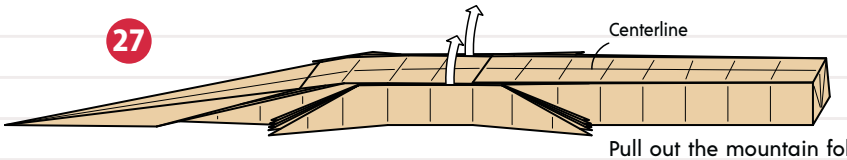
Tuck the edge inside. Repeat behind.

26



Open out the valley fold in the middle to give the body a three-dimensional look.

27

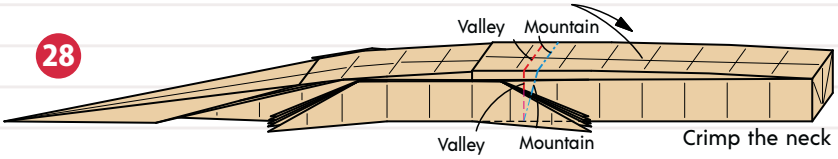


Pull out the mountain fold closest to the middle.

End of the basic folds

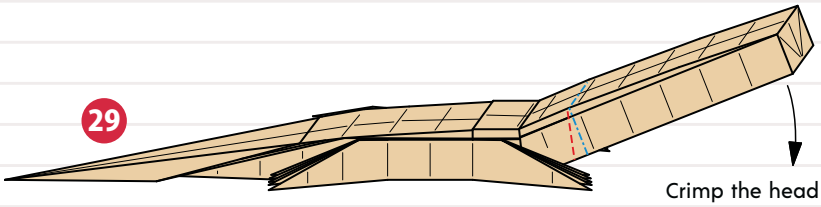
Start applying glue on the non-visible back sides as well as the front side

28



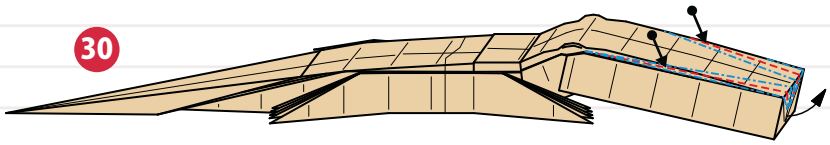
Crimp the neck up.

29



Crimp the head down.

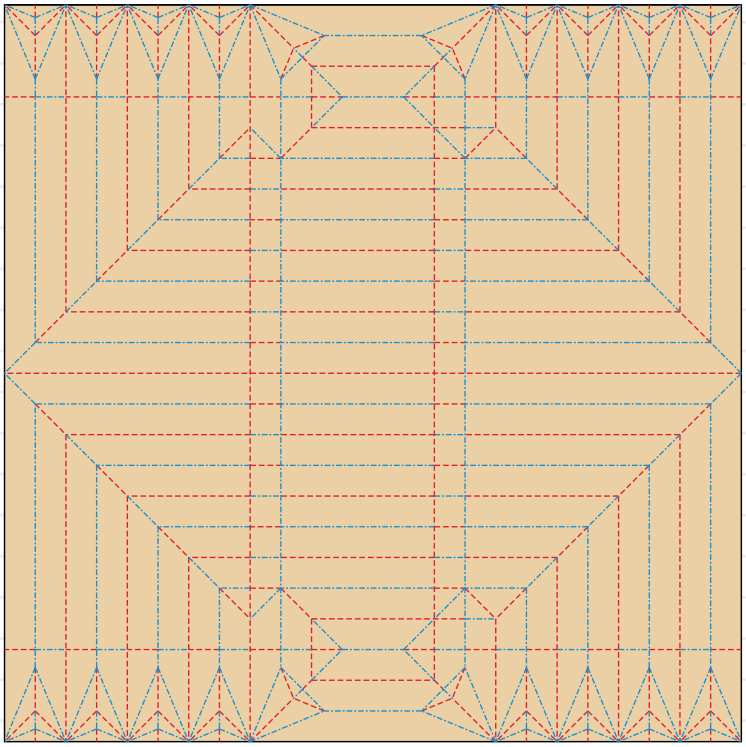
30



Flatten the front edge into a point while crimping the sides.

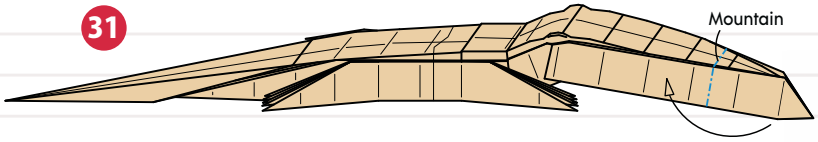
The Crocodile crease pattern

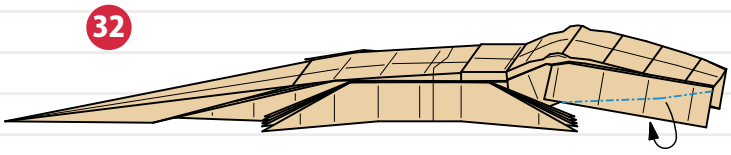
(※ through step 24)



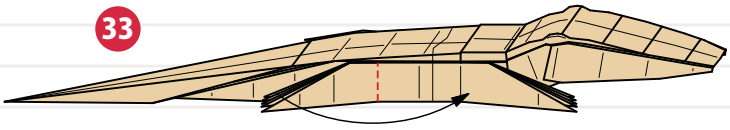
Tail side

Head side

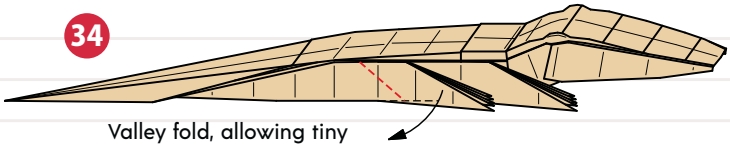




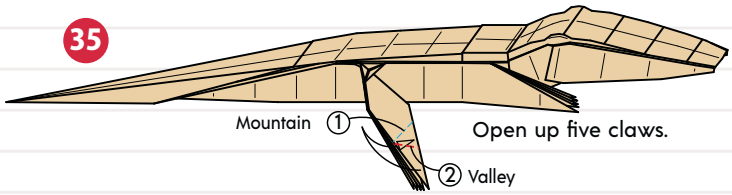
Tuck in. Repeat on the other side.

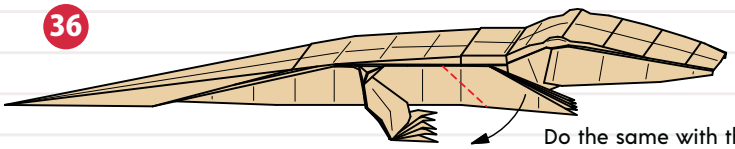


Valley fold. Repeat on the other side.

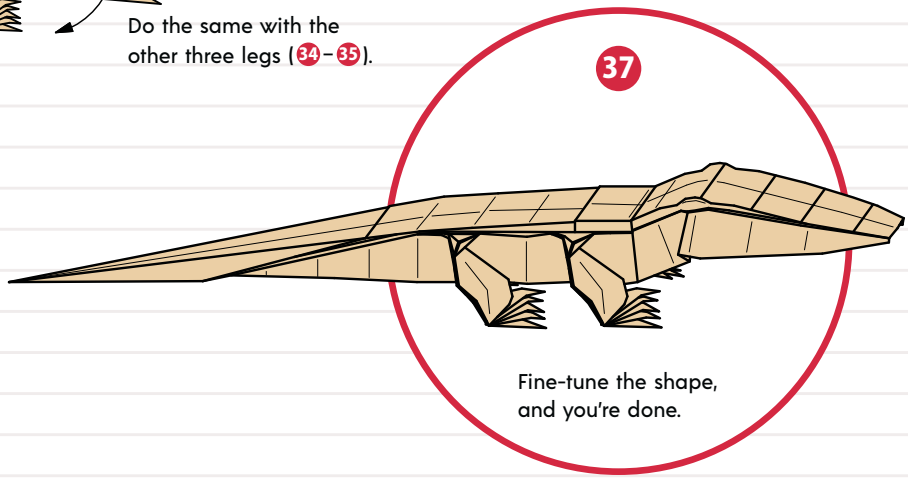


Valley fold, allowing tiny squash folds to form.





Do the same with the other three legs (34–35).



Fine-tune the shape, and you're done.

Difficulty: ★★★½

ELASMOSAURUS

Type of paper used:

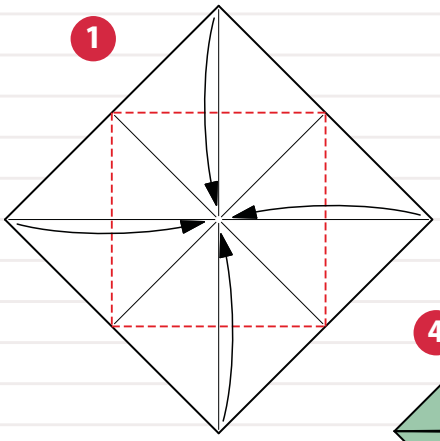
- Handmade Washi
- 10¼ x 10¼ inch (26 x 26 cm)
- 1 sheet

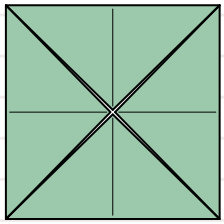
Folding Tips

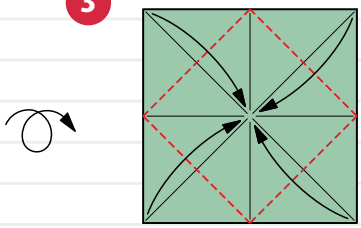
Among the many plesiosaurs, the Elasmosaurus possesses one of the longest necks. Frankly, this creation reminds one more of the Futabasaurus due to the shorter neck length. The basic folds pattern of this piece is unique, which I hope you will enjoy. Initially, I devised this method to fold long-necked turtles, but I adjusted it for this prehistoric application. The reverse fold at step 18 allows you to tuck in the excess edge at the middle part of the neck.

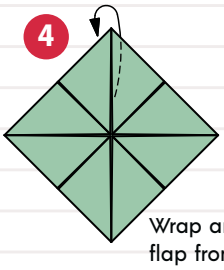
You will be prompted to start applying glue at step 26, but you will want to unfold a few steps (for instance, back to step 20) before applying glue and returning the model to the step-26 state again.

Generally speaking, this is good practice every time you're prompted to start applying glue.

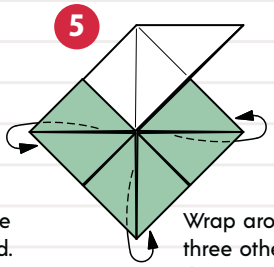




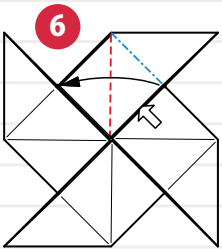




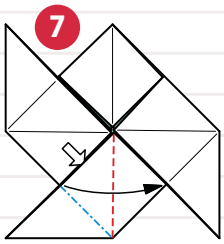
Wrap around the flap from behind.



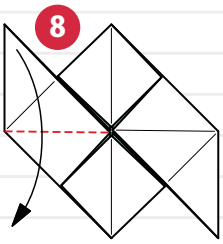
Wrap around the three other flaps in the same way.



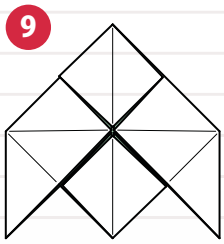
Squash fold.

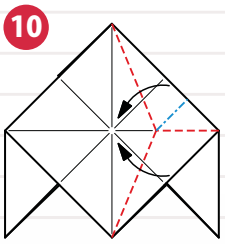


Squash fold the bottom flap.

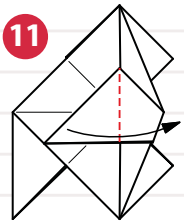


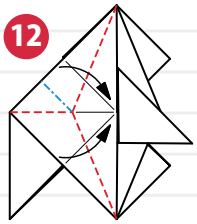
Wrap the flap around from behind.



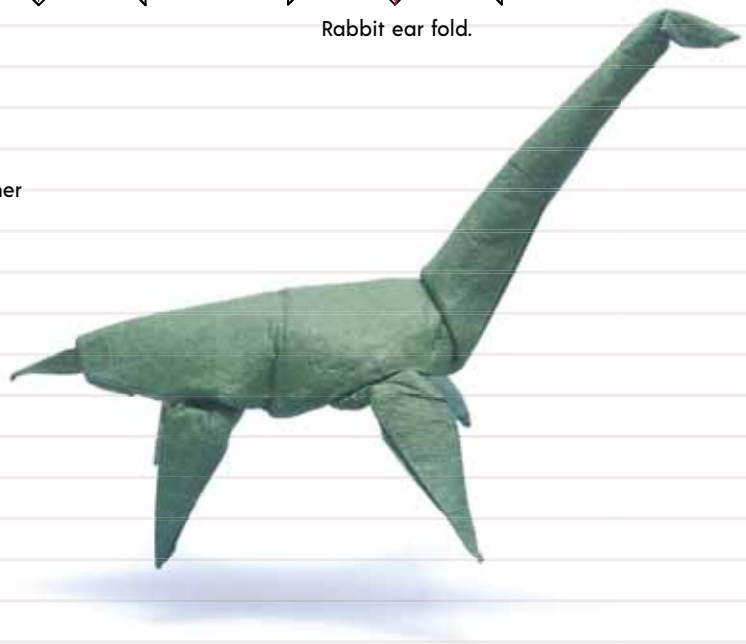


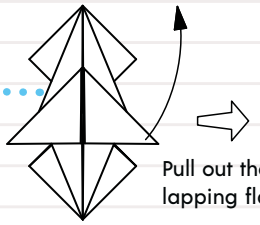
Rabbit ear fold.



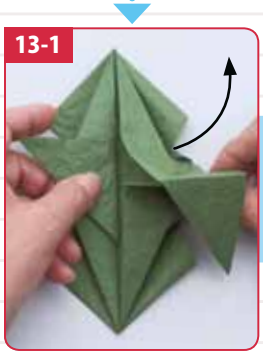


Repeat on the other side (10–11).



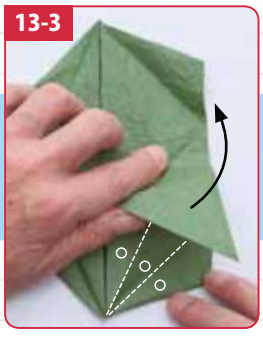


Pull out the over-lapping flap.

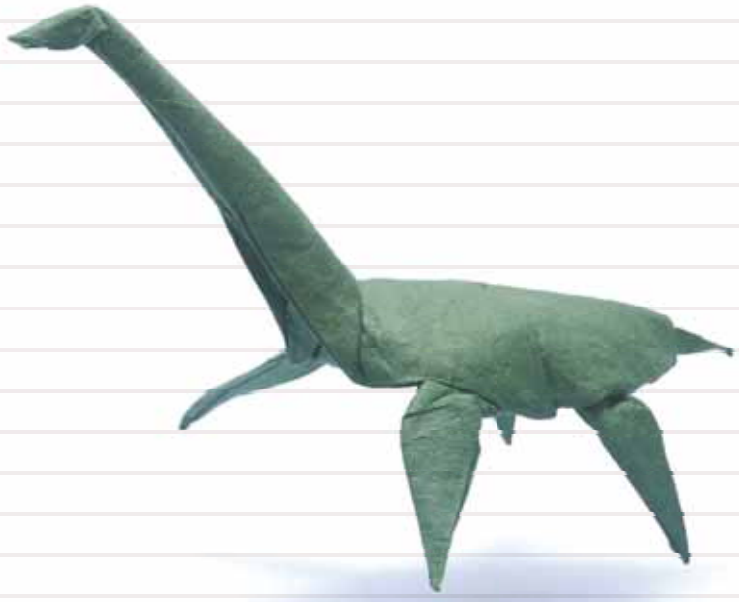


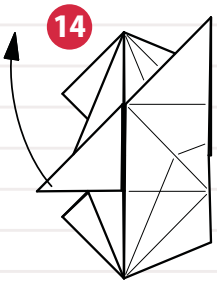
Pull out the overlapping flap.

The three sections should be equal.

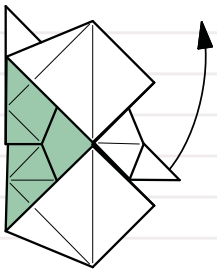


Likewise, the three sections on the bottom side should be equal.

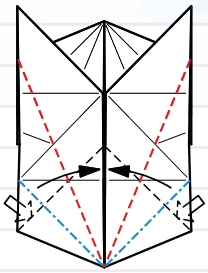




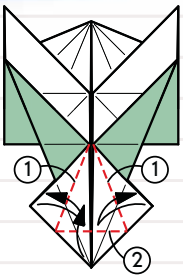
Fold the other side in the same way.



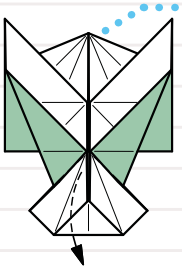
Rear view of step 14.



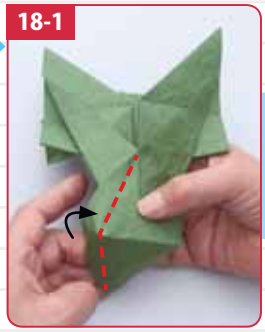
Pleat the sides along the existing creases, squash folding flat.



Fold 1, and then 2.



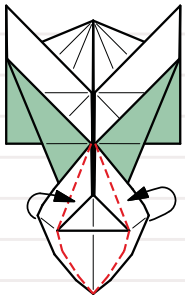
Wrap the flap around from behind, allowing the side corners to invert.



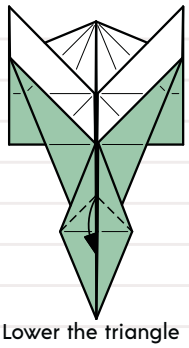
Wrap the side flap around.

The fold in progress.

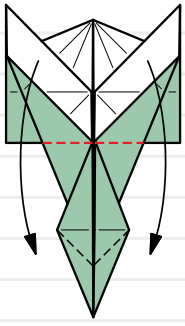
Wrap the right side around in the same way.

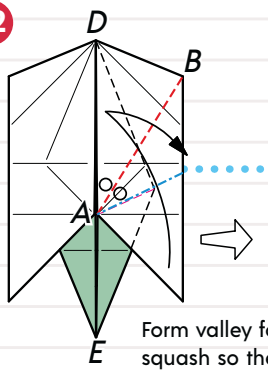


The fold in progress.

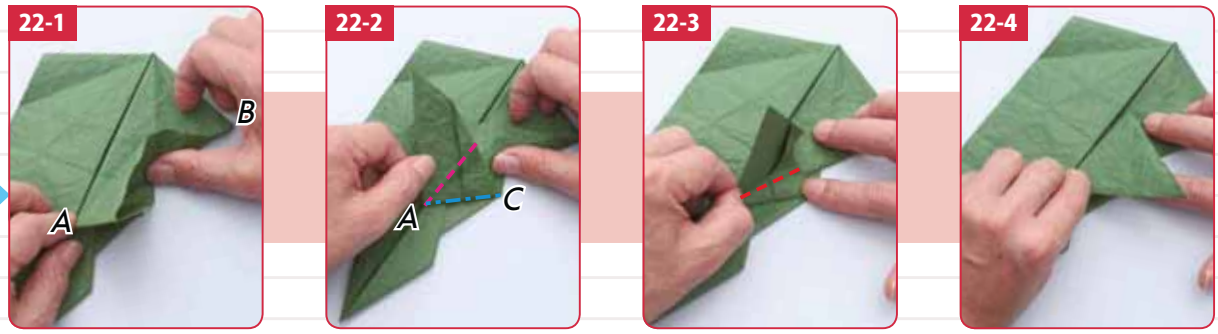


Lower the triangle folded at step 17.

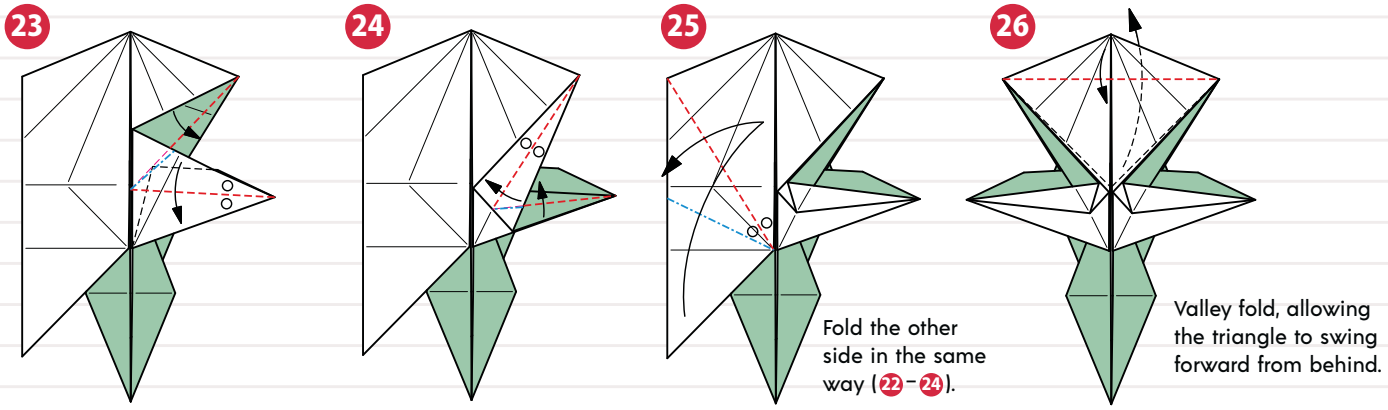




Form valley fold A-B and squash so the resulting mountain fold lies on D-E. Refer to page 64 for tips on folding.



Valley fold A-B. | Mountain fold A-C. | Valley fold. | The structure after folding.



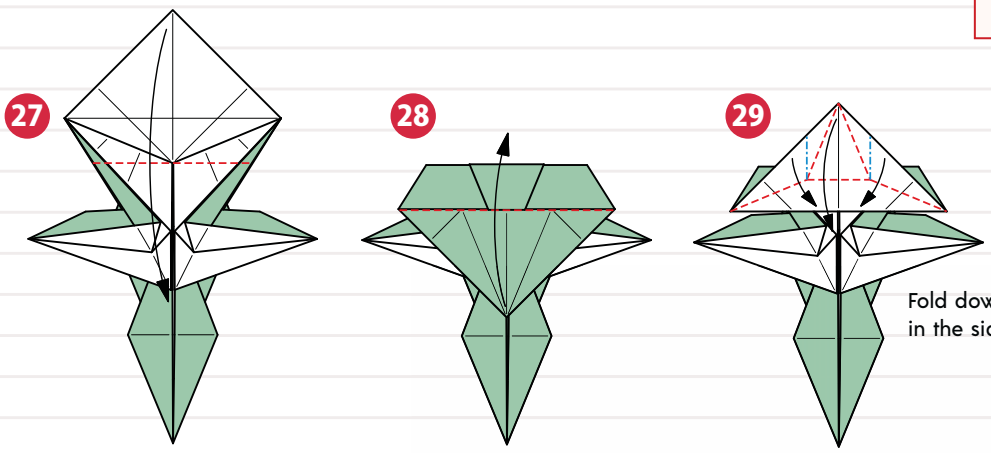
Swivel fold.

Swivel fold again.

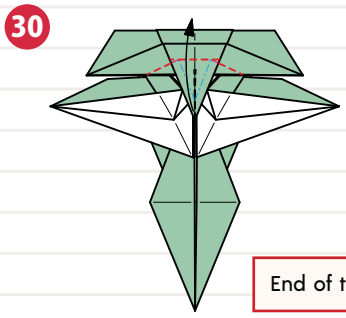
Fold the other side in the same way (22–24).

Valley fold, allowing the triangle to swing forward from behind.

Start applying glue on the non-visible back sides

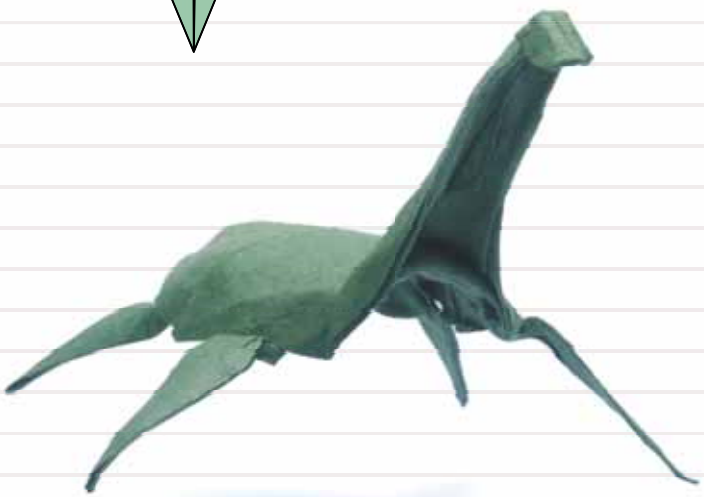


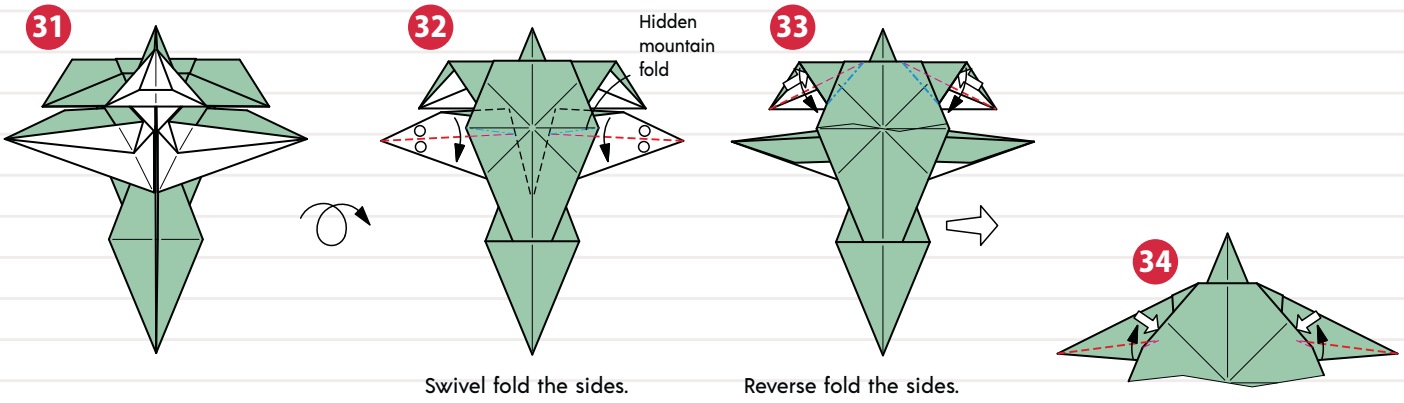
Fold down while swiveling in the sides.

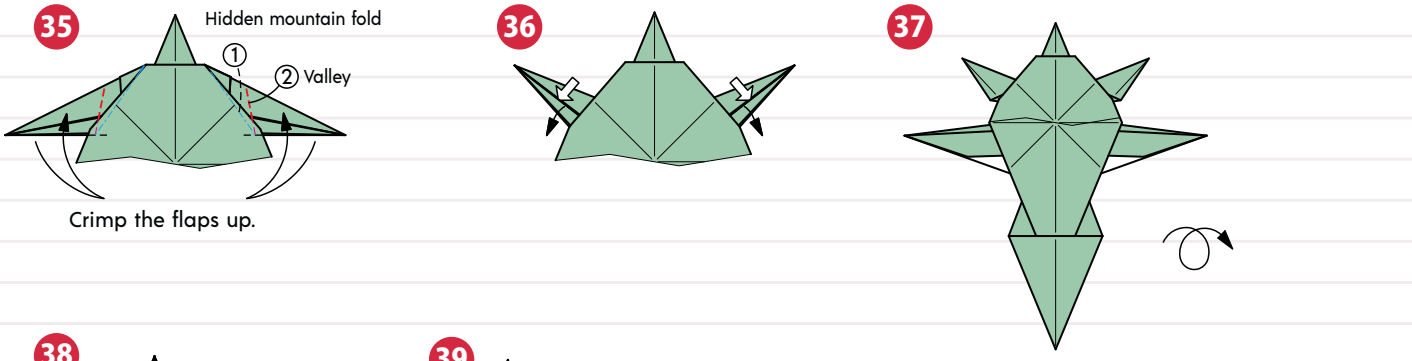


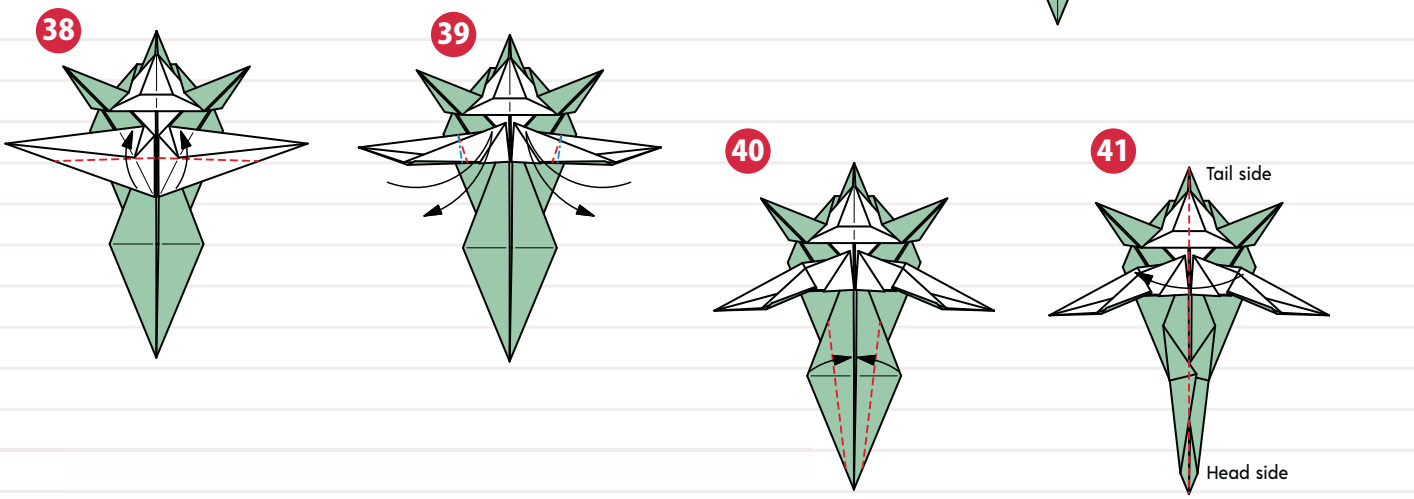
End of the basic folds

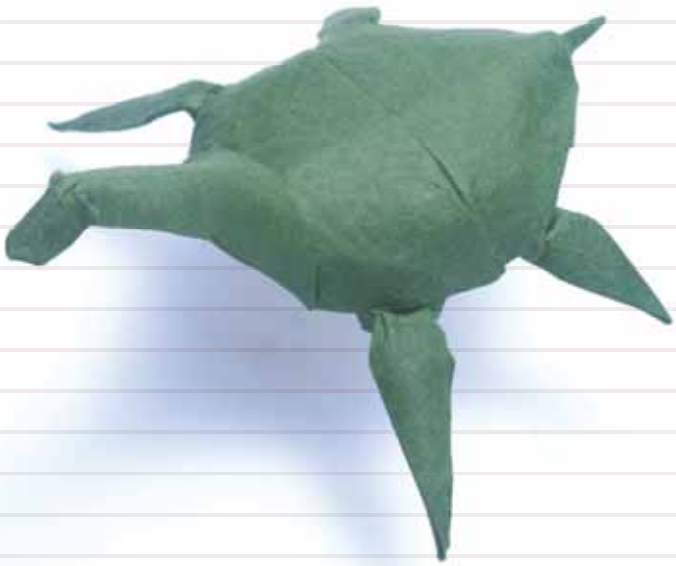
Valley fold up, allowing small squashes to form.

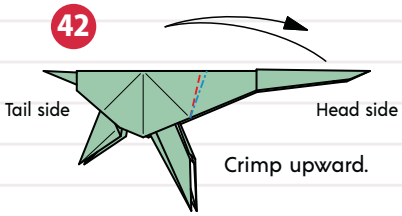


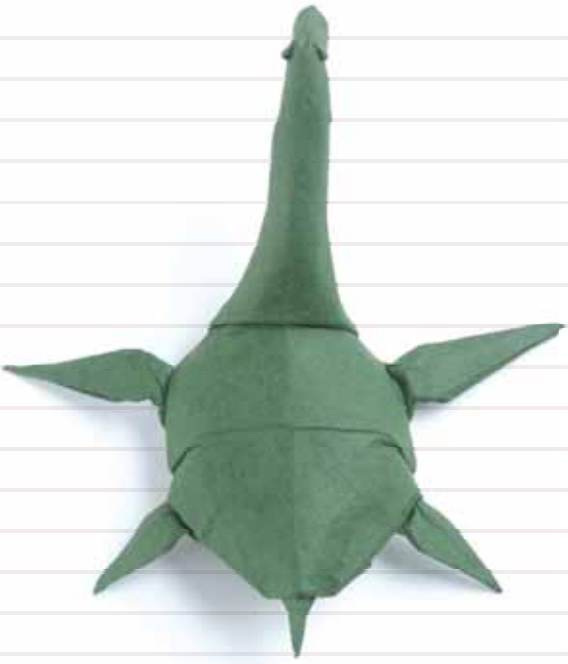

31
32
Hidden mountain fold
33
34
Swivel fold the sides.
Reverse fold the sides.


35
Hidden mountain fold
1
2 Valley
36
37
Crimp the flaps up.

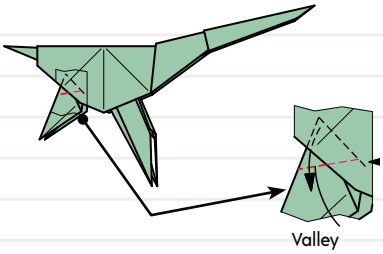

38
39
40
41
Tail side
Head side
Fold across the middle and rotate.




42
Tail side
Head side
Crimp upward.

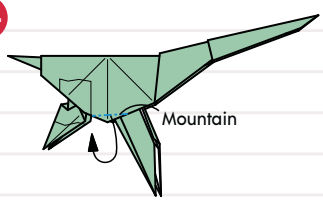


43



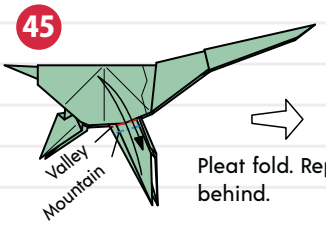
Pull out the trapped layer and squash it flat. Repeat behind.

44



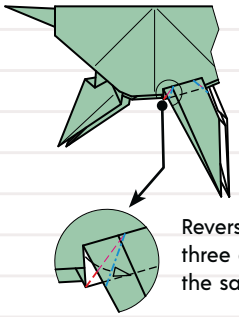
Mountain fold the edge inside. Repeat on the other side.

45



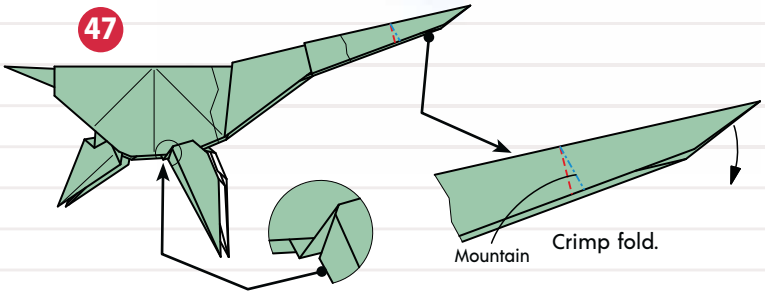
Pleat fold. Repeat behind.

46



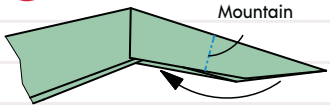
Reverse fold. Fold the three other corners in the same way.

47



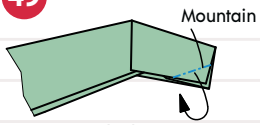
Crimp fold.

48



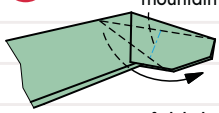
Inside reverse fold.

49



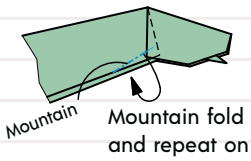
Tuck the corner inside. Repeat on the other side.

50



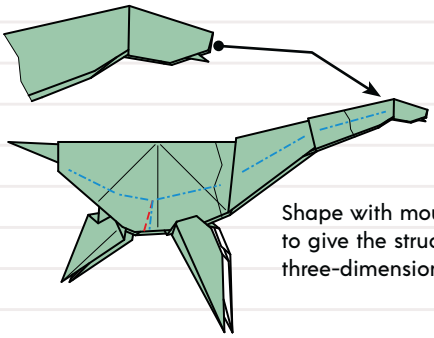
Reverse fold the hidden flap.

51



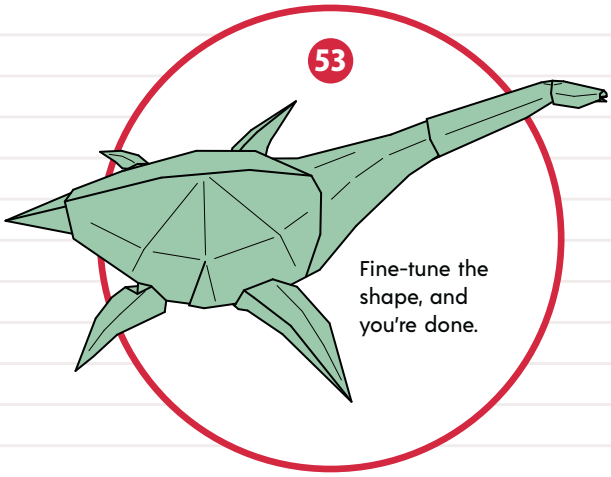
Mountain fold and repeat on the other side.

52



Shape with mountain folds to give the structure a three-dimensional look.

53



Fine-tune the shape, and you're done.

Difficulty: ★★★★

SPINOSAURUS

Type of paper used:

- Handmade Washi
- 12¼ x 12¼ inch (31 x 31 cm)
- 1 sheet

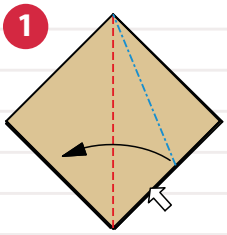
Folding Tips

For all the dinosaur movie fanatics, it might seem odd to include this dinosaur as part of an aquatic animals collection, but recent research suggest that the Spinosaurus may have spent most of its time hunting in water. To throw in another interesting fact, the Spinosaurus was bulkier than the famous Tyrannosaurus Rex, making it the largest carnivorous dinosaur of all time.

Steps 28–31 aim to recreate the sail-like structure of the dinosaur. It is indicated that glue should be applied at step 31, but the small folds between steps 19–27 can be glued in advance, as they are fragile. Steps 38–39 require a crimp fold to create the shape of the head, which can be done effectively by thinning the top of the neck with a mountain fold. This technique can be applied whenever applicable on other creations as well.

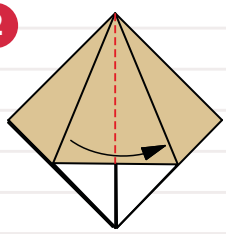
Start from the Preliminary Base (page 10)

1



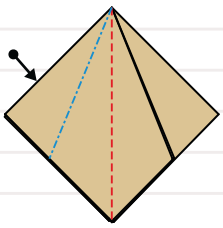
Open in the direction of the white arrow and squash fold.

2



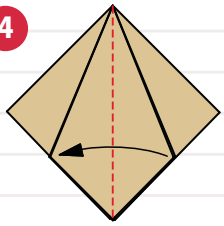
Swing one flap over.

3



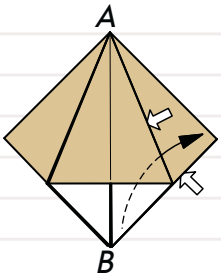
Repeat steps 1 – 2 on the other flap indicated by the dot-terminated arrow.

4



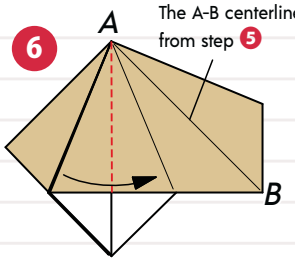
Swing one flap over.

5



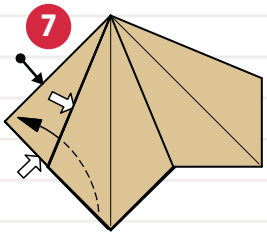
Open in the direction of the white arrows and squash fold. The valley A-B should become flat.

6



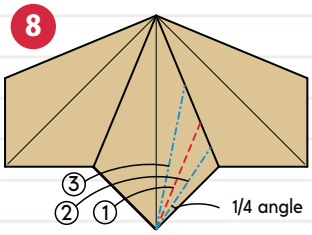
Swing one flap over.

7



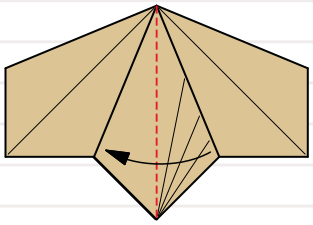
Repeat steps 4 – 6 on the other flap indicated by the dot-terminated arrow.

8



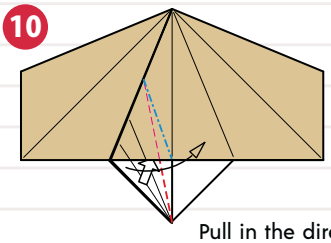
Make folding lines according to the diagram.

9



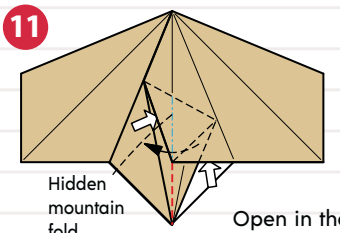
Swing one flap over.

10



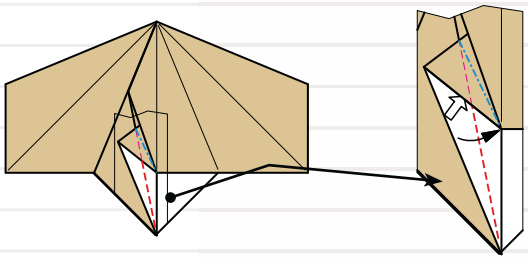
Pull in the direction of the white arrow and reverse fold.

11



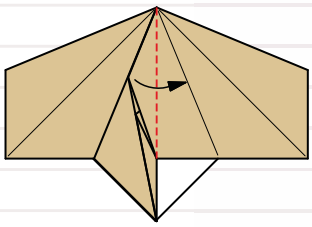
Open in the direction of the white arrows and reverse fold.

12

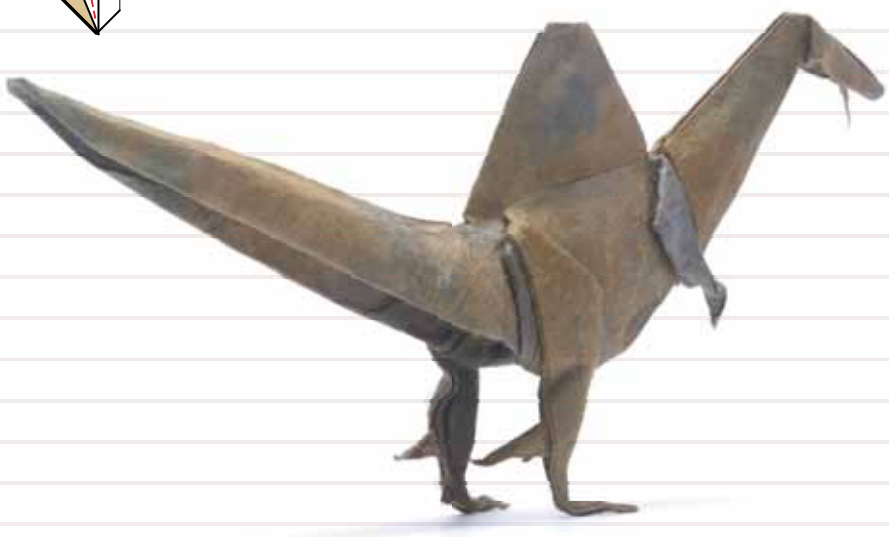


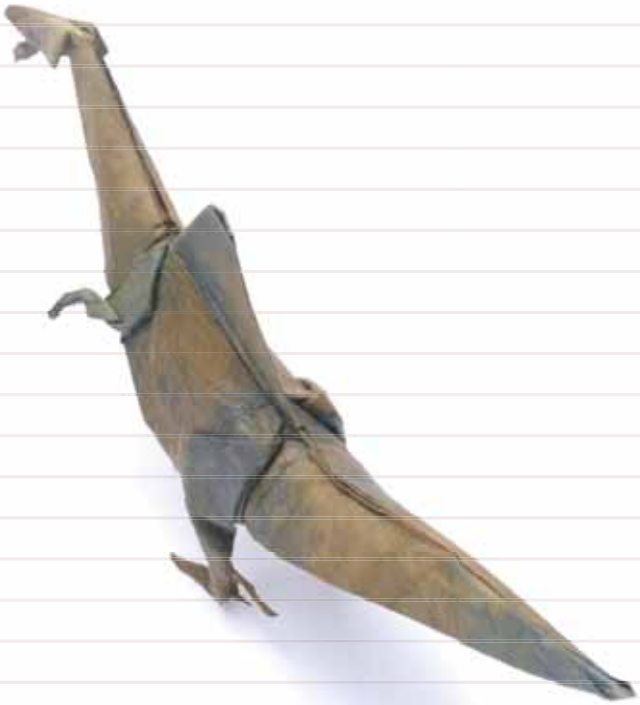
Open in the direction of the white arrow and reverse fold.

13

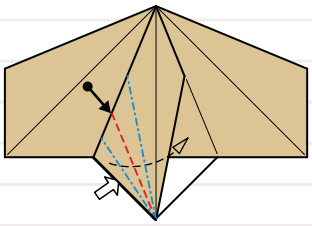


Swing one flap over.



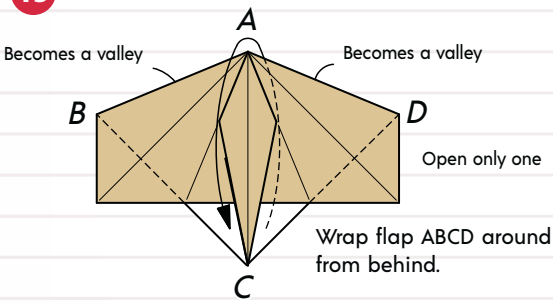


14

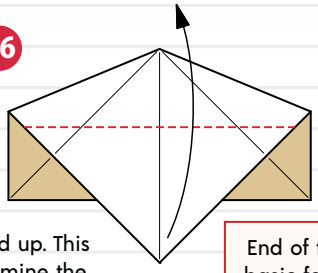


Repeat steps 8 – 13 on the other side.

15



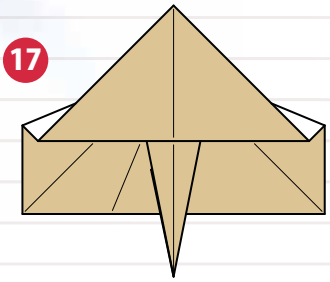
16



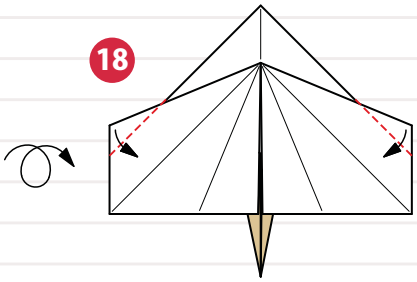
Valley fold up. This will determine the length of the neck.

End of the basic folds

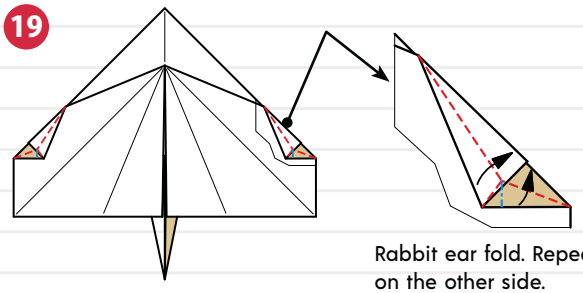
17



18

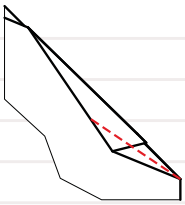


19



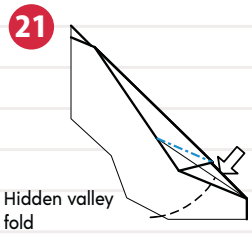
Rabbit ear fold. Repeat on the other side.

20



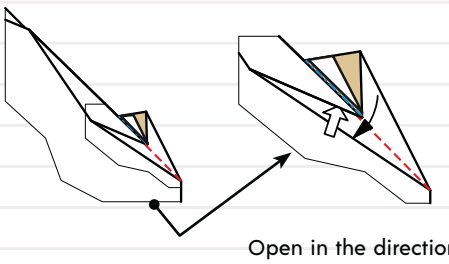
Form a crease along the angle bisector. Repeat on the other side.

21



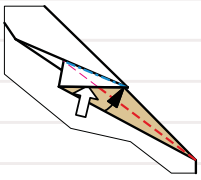
Open in the direction of the arrow and then reverse fold. Repeat on the other side.

22



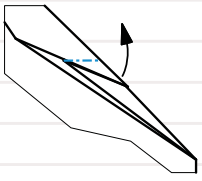
Open in the direction of the white arrow and reverse fold. Repeat on the other side.

23



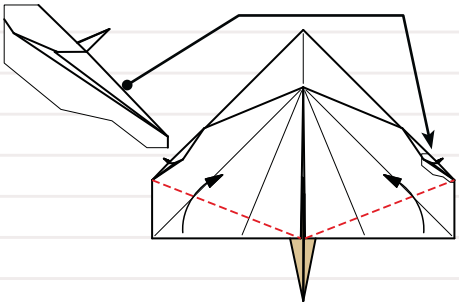
Open in the direction of the white arrow and reverse fold. Repeat on the other side.

24

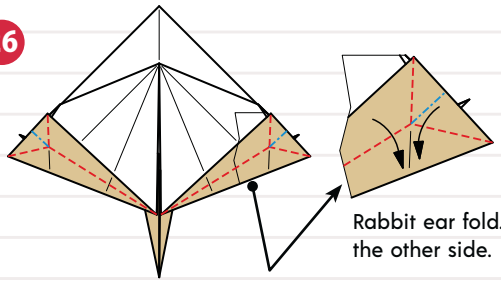


Reverse fold. Repeat on the other side.

25

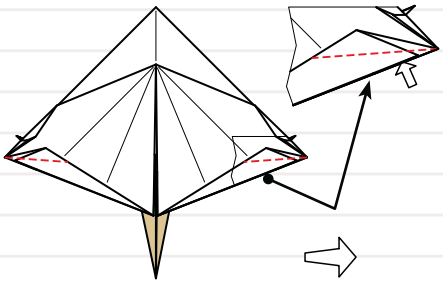


26



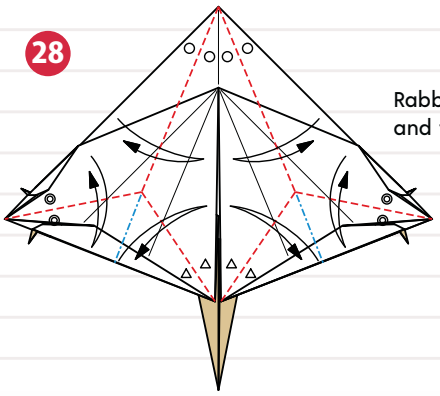
Rabbit ear fold. Repeat on the other side.

27



Fold in the same way as steps 19–24.

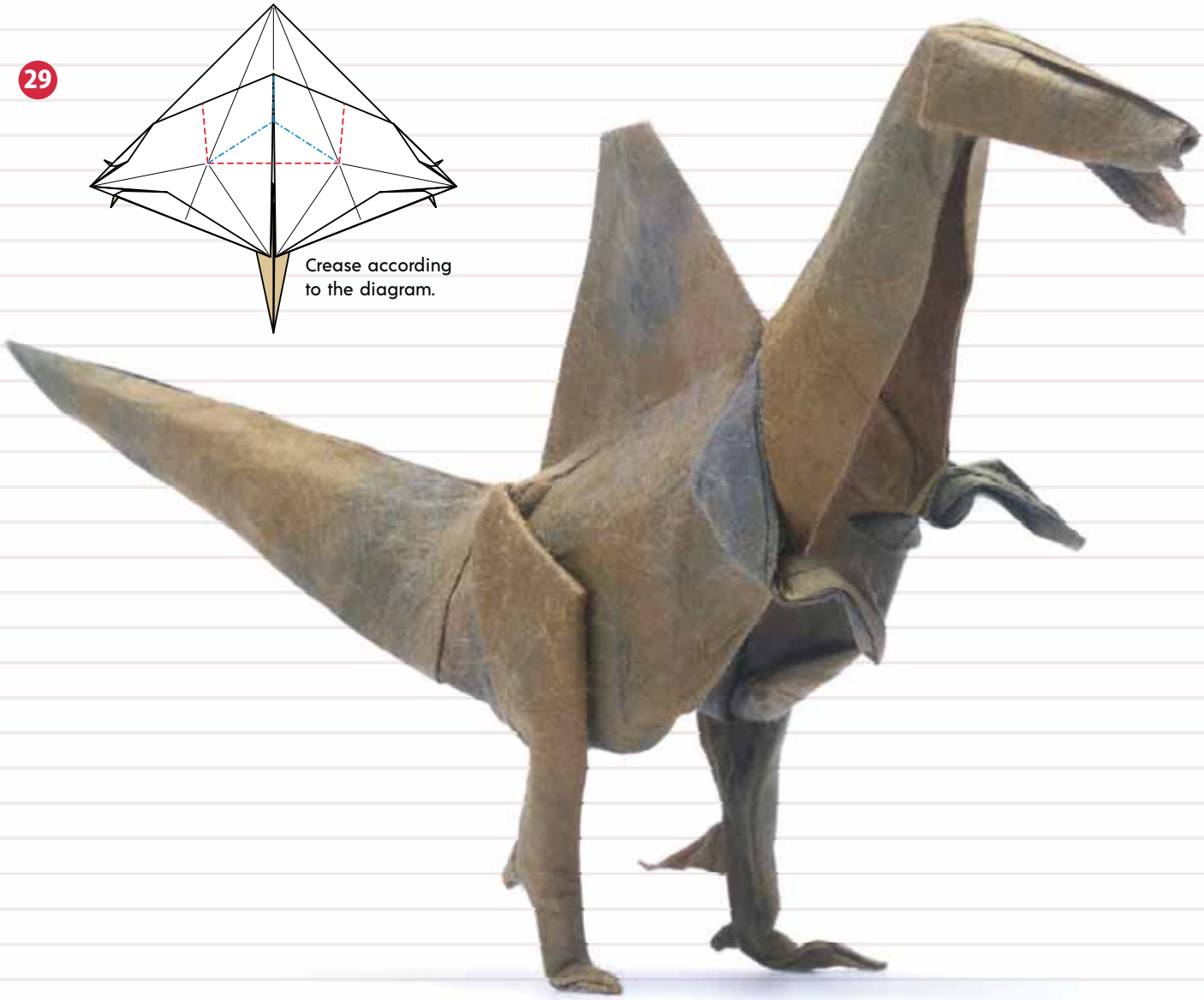
28

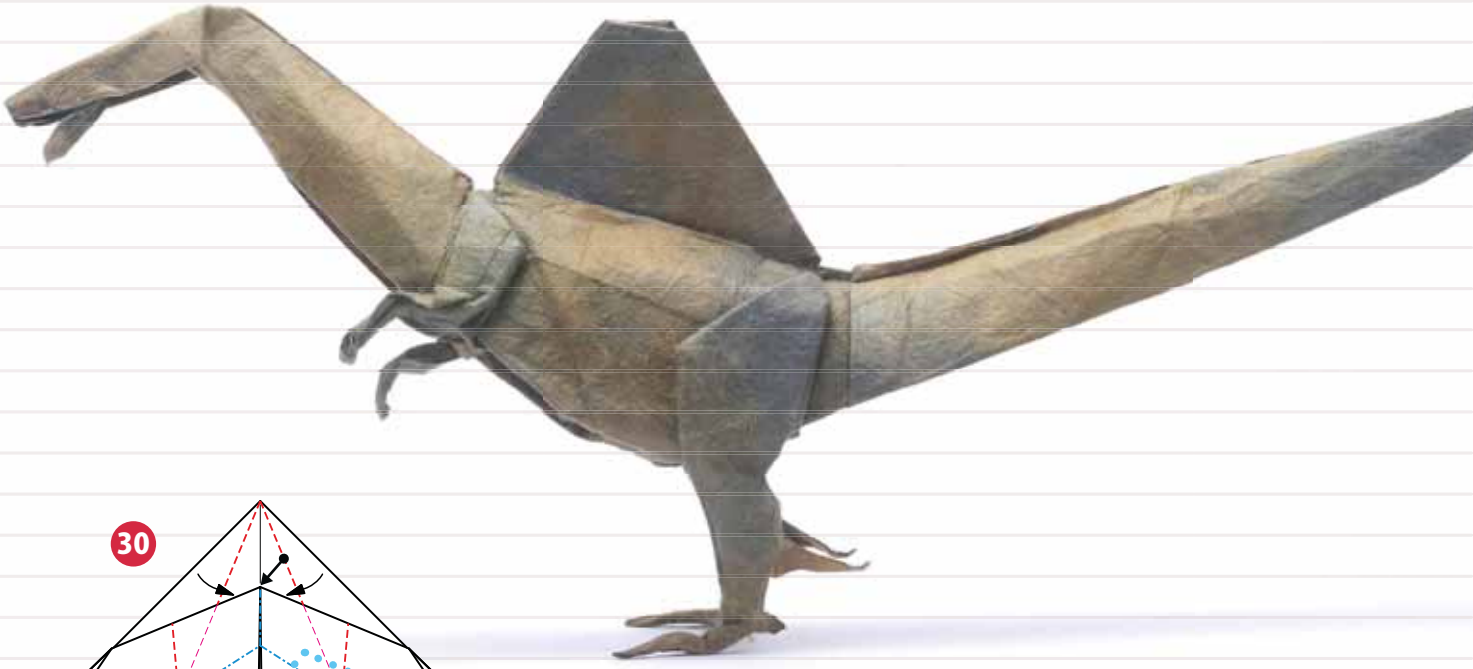


Rabbit ear the sides and then unfold.

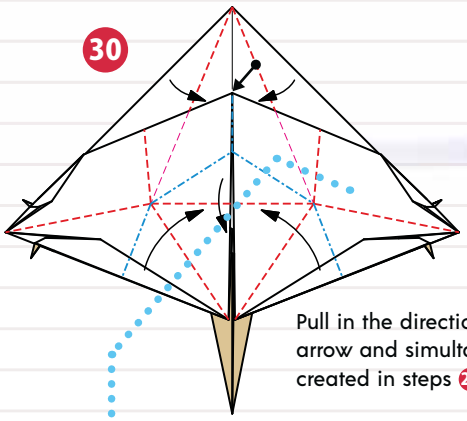
29

Crease according to the diagram.



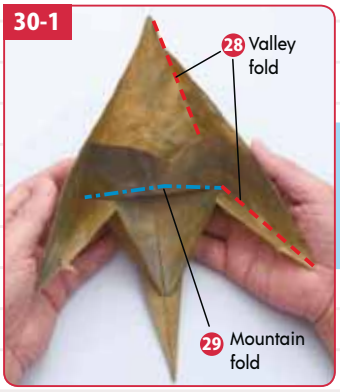


30

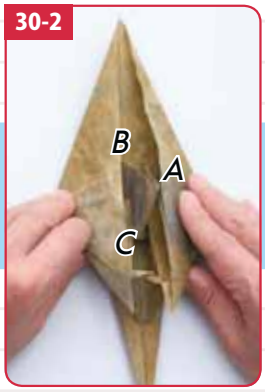


Pull in the direction of the dot-terminated arrow and simultaneously fold the lines created in steps 28 and 29.

30-1



30-2

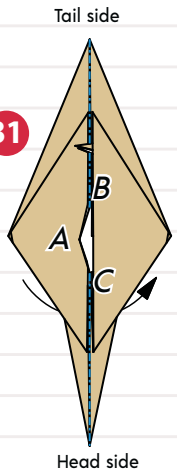


Triangle ABC should appear in the middle.

30-3

How the paper looks after flattening.

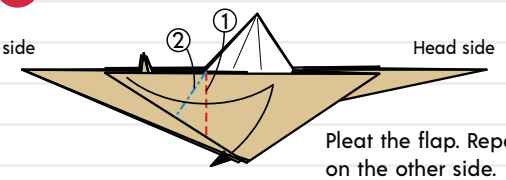
31



Fold across the middle and rotate.

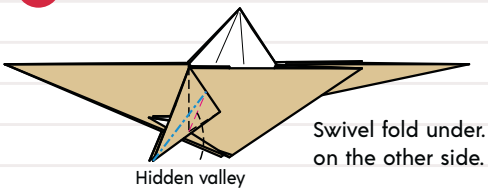
Start applying glue on the non-visible back sides as well as the front sides

32



Pleat the flap. Repeat on the other side.

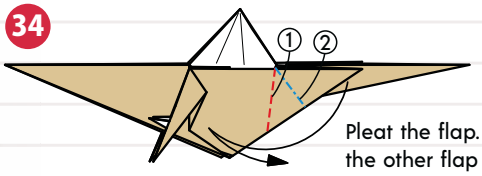
33



Hidden valley fold.

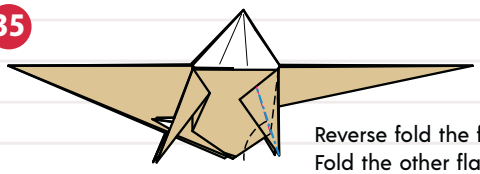
Swivel fold under. Repeat on the other side.

34



Pleat the flap. Fold the other flap in the same way.

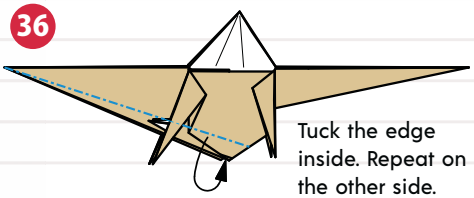
35



Hidden valley fold.

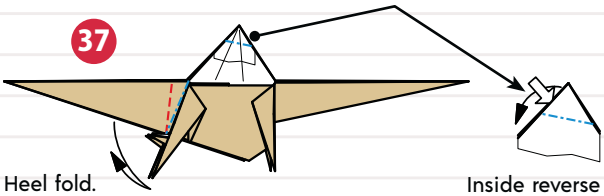
Reverse fold the flap. Fold the other flap in the same way.

36



Tuck the edge inside. Repeat on the other side.

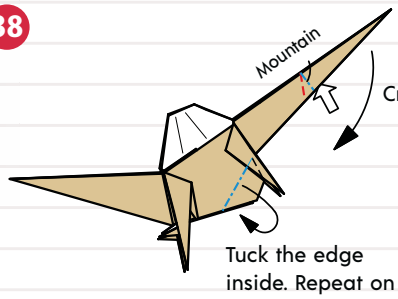
37



Heel fold.

Inside reverse fold.

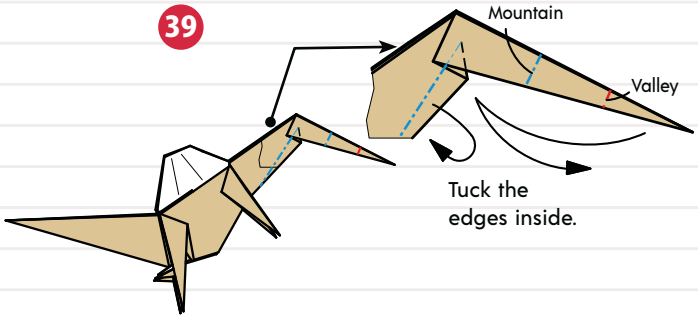
38



Crimp fold.

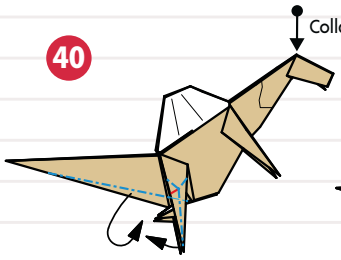
Tuck the edge inside. Repeat on the other side.

39



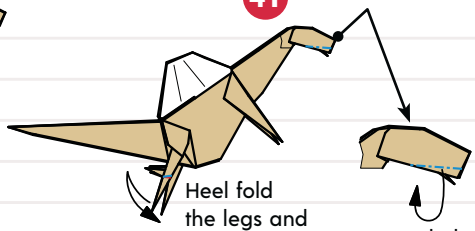
Tuck the edges inside.

40



Tuck the edges inside and thin fold the legs.

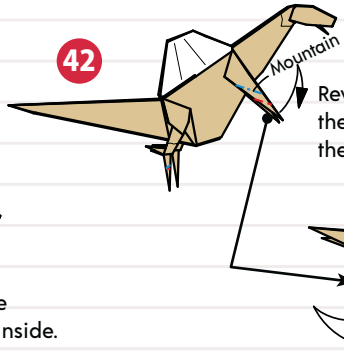
41



Heel fold the legs and mountain fold the corners of the head.

Tuck the corner inside.

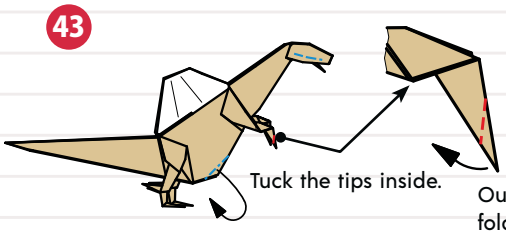
42



Reverse fold in and then out. Repeat on the other side.

Inside reverse fold.

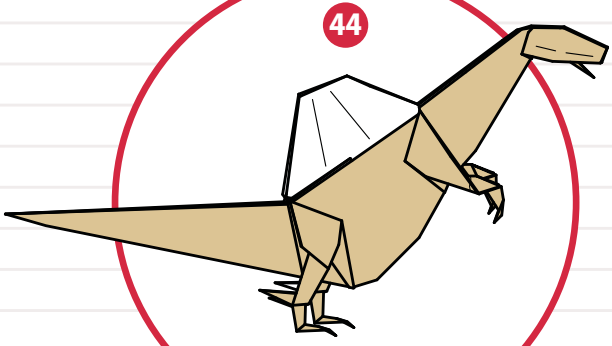
43



Tuck the tips inside.

Outside reverse fold.

44



Fine-tune the shape, and you're done.

Difficulty: ★★★★

ICHTHYOSAURUS

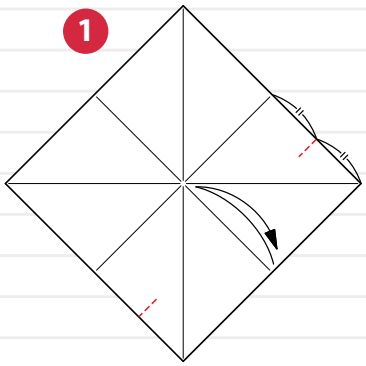
Type of paper used:

- Handmade Washi
- 12¼ x 12¼ inch (31 x 31 cm)
- 1 sheet

Folding Tips

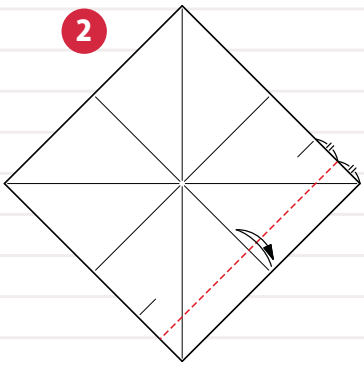
This creation applies techniques from simpler models such as the Polar Bear (page 31) to recreate the dorsal fin cleverly using the created edge. Initially, the dorsal fin is tucked in through steps 1–9, which results in a thick layer of paper on the back side. If this becomes a problem, I recommend that you use a thinner sheet of paper for this creation. While performing step 22, do not forget to mountain fold as shown in the second image in the series of photos that illustrate the step. This fold aids in properly positioning the dorsal fin during step 22-3. You can apply glue as early as after step 7, when the petal fold has been completed. Apply glue to the non-visible back sides as usual. When finalizing, I recommend that you add volume to the body by using soft mountain folds. In the same way as folding the Swordfish (page 46), you can add realism to the head by thinning through mountain folding. Furthermore, pinching the top of the head and then slightly pulling backward will result in a nicely formed forehead and eyes.

1



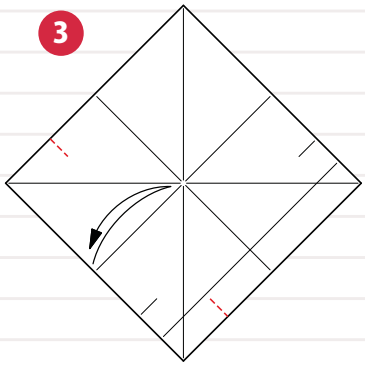
Crease the edges in half, leaving pinch marks.

2



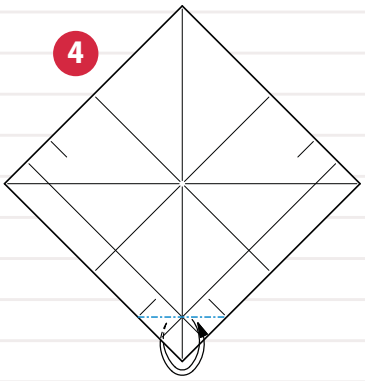
Crease the outer section in half.

3



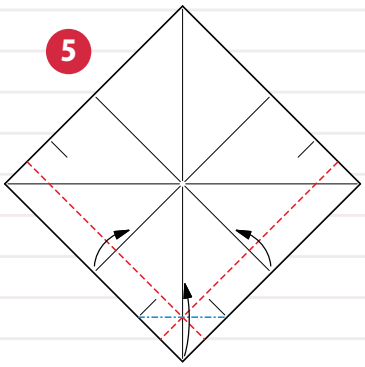
Repeat on the other side (1 – 2).

4



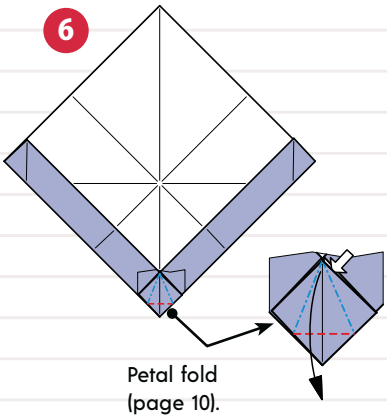
Crease with a mountain fold.

5



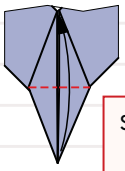
Valley fold the sides in while squash folding the corner.

6



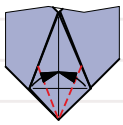
Petal fold (page 10).

7

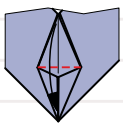


Start applying glue on the non-visible back sides

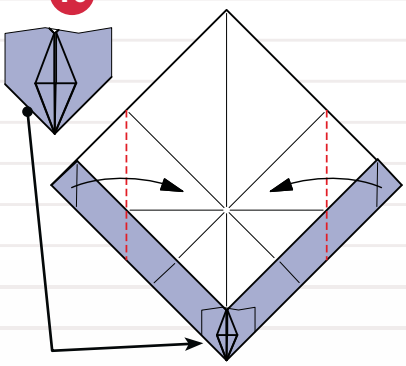
8

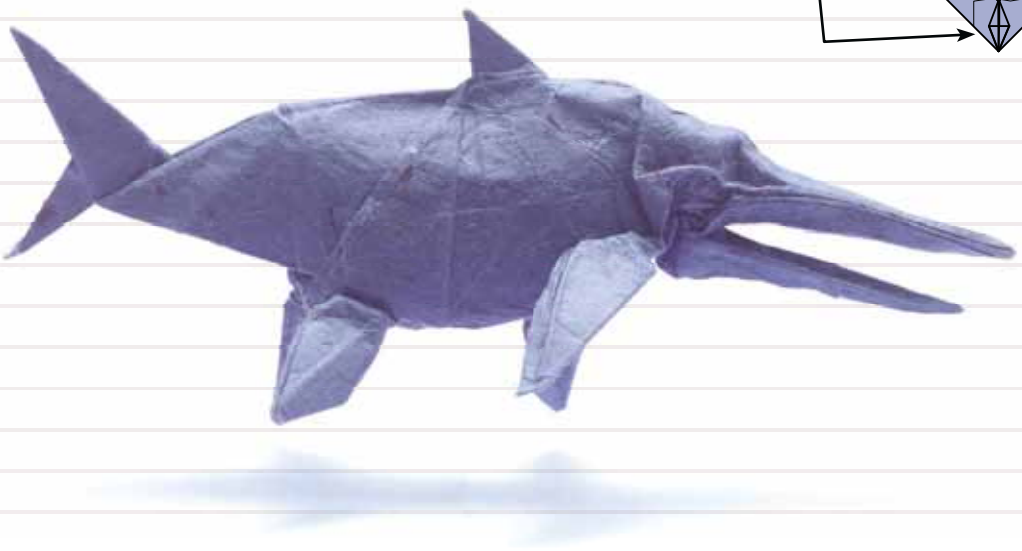


9

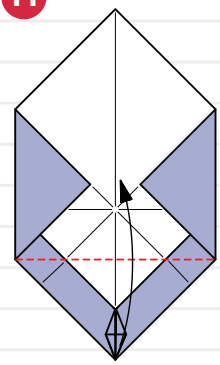


10

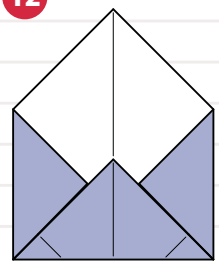




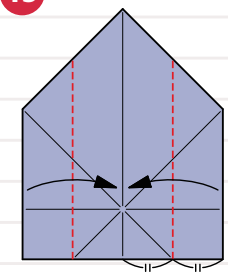
11



12

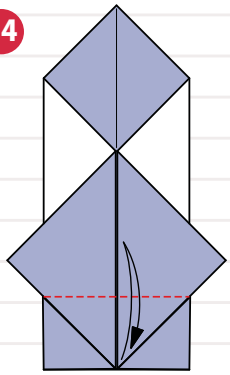


13



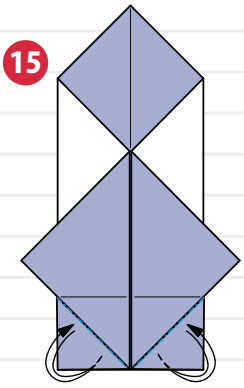
Valley fold to the center, allowing the flaps from behind to flip forward.

14



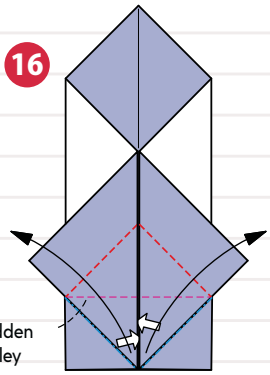
Crease the upper layer.

15



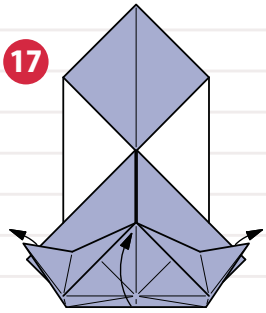
Crease with mountain folds.

16



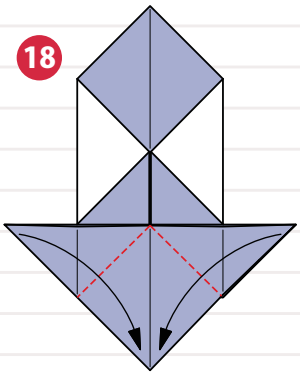
Pull the corners outward, squashing the sides flat, and allowing the flap from behind to swing forward.

17

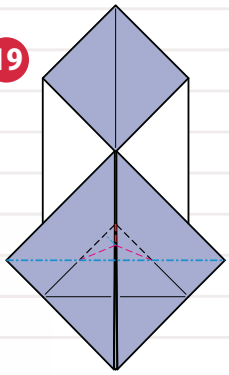


Step 16 in progress.

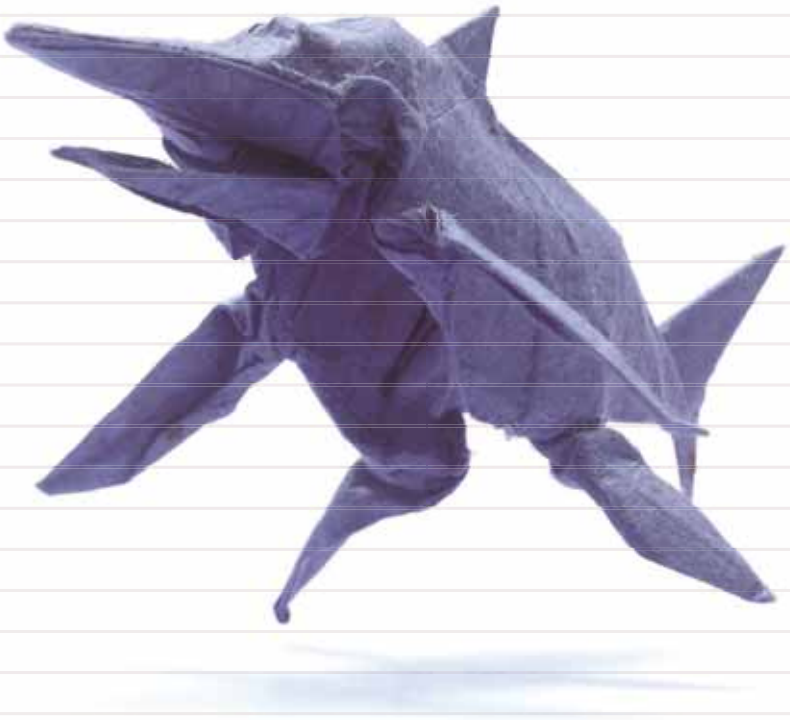
18



19

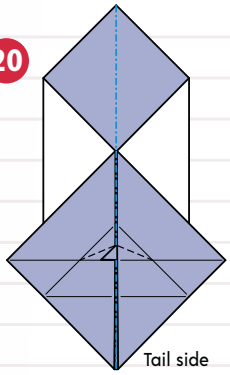


Crease with a mountain fold. Then rabbit ear fold the triangle on the inside.



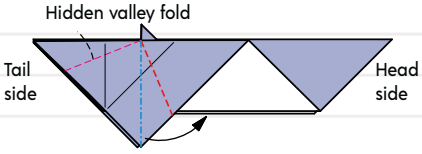
Head side

20



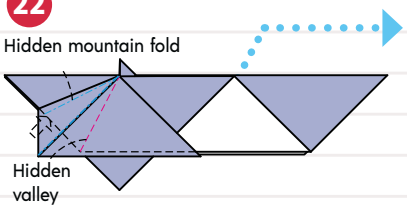
Fold across the middle and rotate.

21



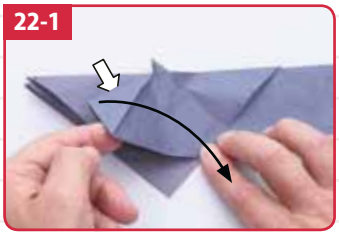
Pull the corner over and squash fold flat.

22



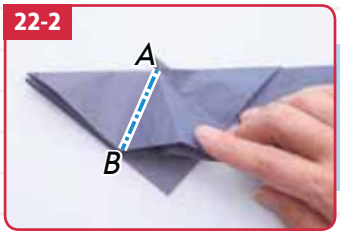
Reverse fold the edge inside.

22-1



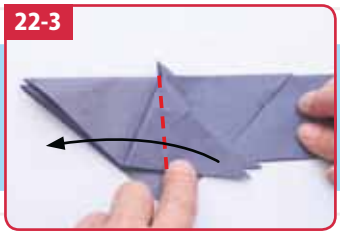
Open up in the direction of the white arrow.

22-2



Mountain fold A-B.

22-3

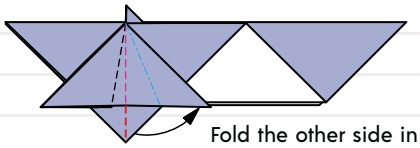


Valley fold back over.

22-4

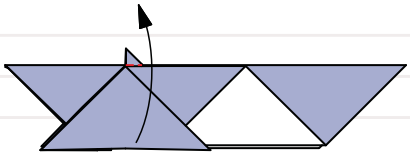
Image of the structure after the fold.

23



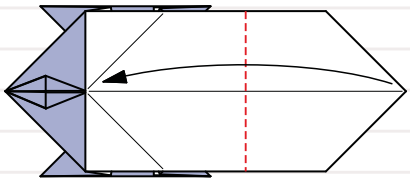
Fold the other side in the same way (21–22).

24

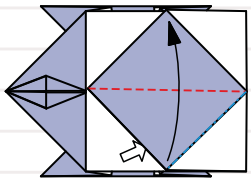


Open along the center.

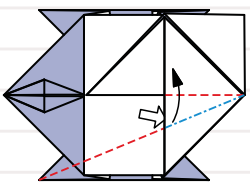
25



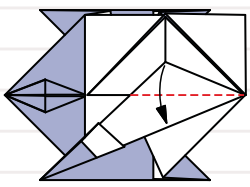
26



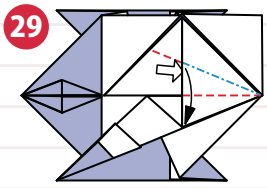
27



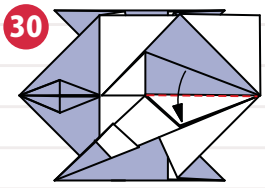
28



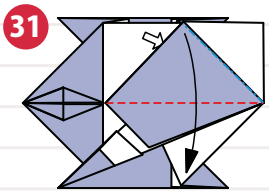
29



30

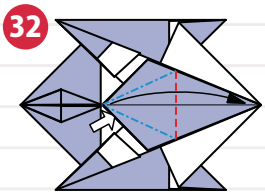


31



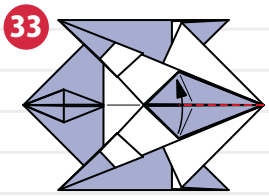
Repeat steps 26–30 on the other side.

32



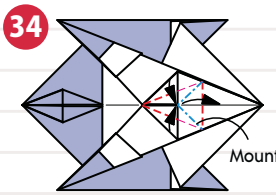
Petal fold (page 11).

33



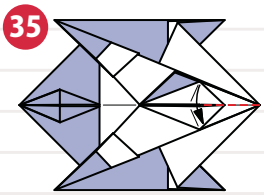
Swing up two flaps.

34



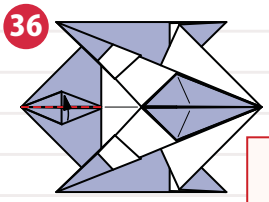
Petal fold.

35



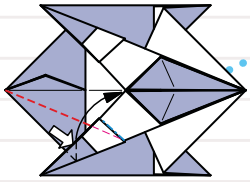
Swing the two flaps back down. Repeat steps 33–35 on the other side.

36



End of the basic folds

37



Valley fold to the center while reverse folding the hidden layer.

37-1

Valley fold.

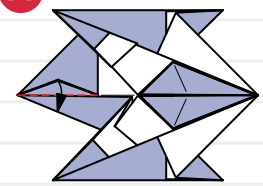
37-2

The fold in progress.

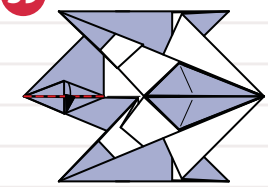
37-3

The structure after folding.

38

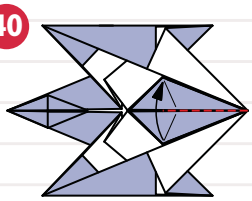


39



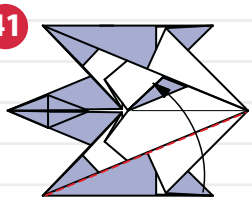
Repeat on the other side.

40

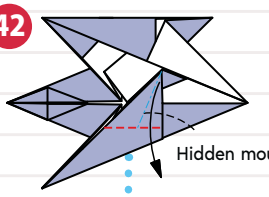


Swing up three flaps.

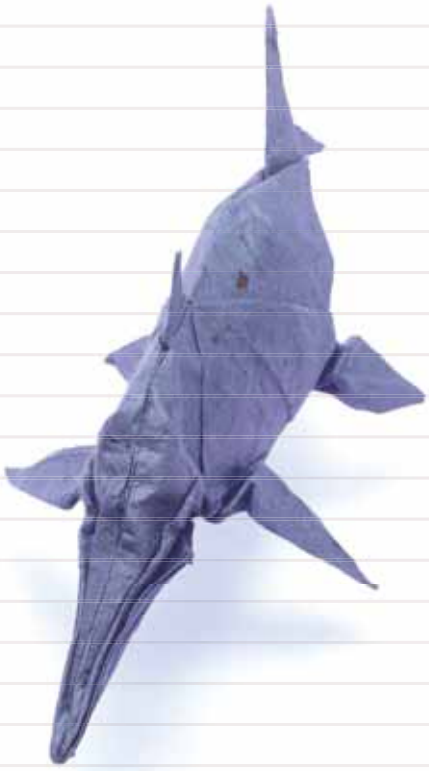
41



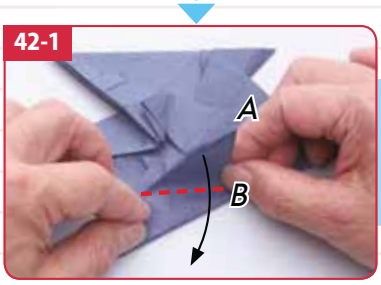
42



Valley fold down, allowing a squash fold to form.

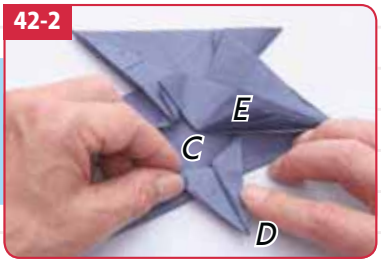


42-1



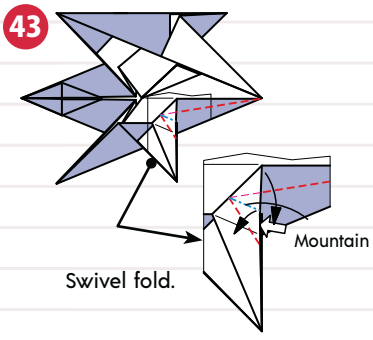
Valley fold in the direction of the arrow.

42-2



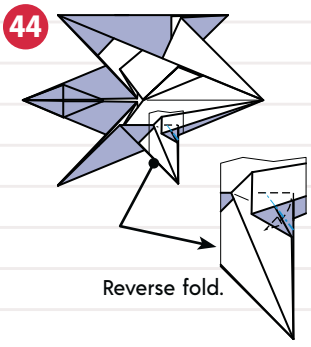
Of triangle CDE, D-E should be perpendicular to mountain fold A-B.

43



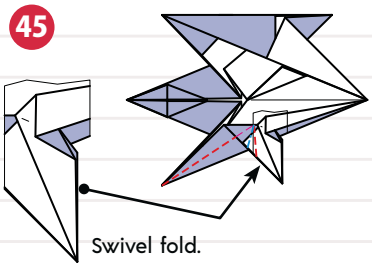
Swivel fold.

44



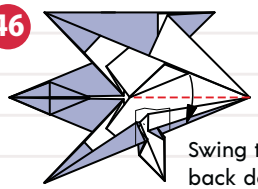
Reverse fold.

45



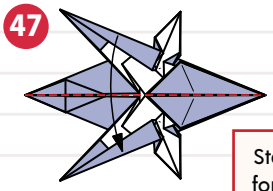
Swivel fold.

46



Swing the flaps back down. Repeat steps 40–46 on the other side.

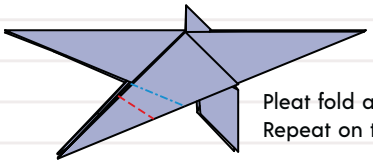
47



Fold across the middle.

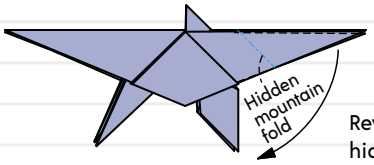
Start applying glue for the second time

48



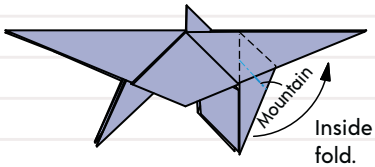
Pleat fold and tuck inside. Repeat on the other side.

49



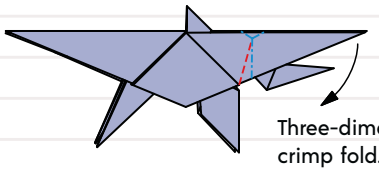
Reverse fold the hidden flap.

50



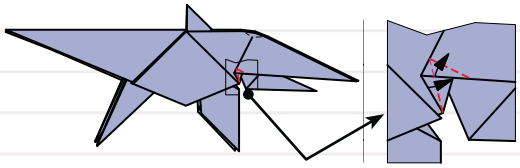
Inside reverse fold.

51

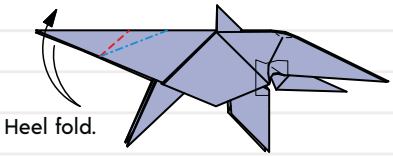


Three-dimensional crimp fold.

52

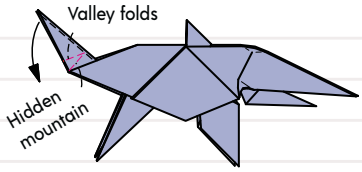


53



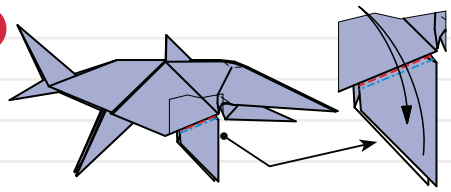
Heel fold.

54



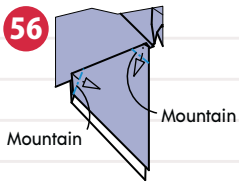
Heel fold.

55

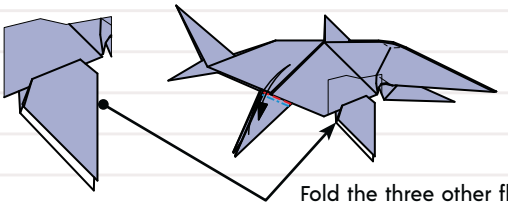


Pleat fold.

56

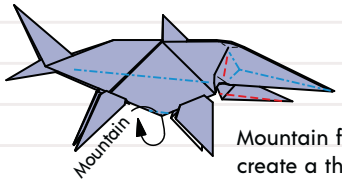


57



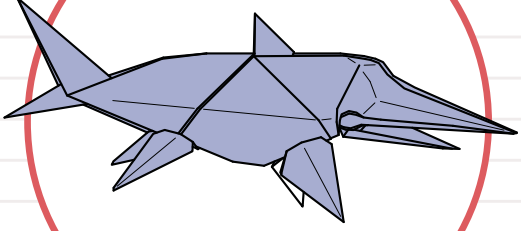
Fold the three other flaps in the same way (56–57).

58



Mountain fold across the body to create a three-dimensional look. Likewise, make the head thinner using a mountain fold.

59



Fine-tune the shape, and you're done.

Difficulty: ★★★★

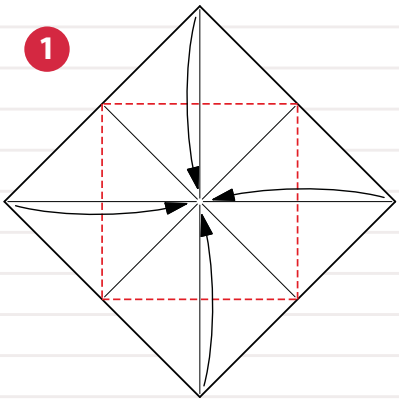
CRAB

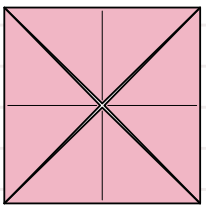
Type of paper used:

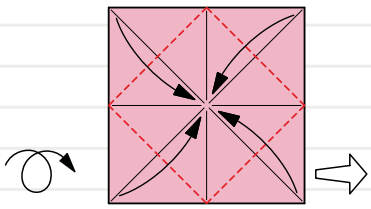
- Washi
- 15¾ x 15¾ inch (40 x 40 cm)
- 1 sheet

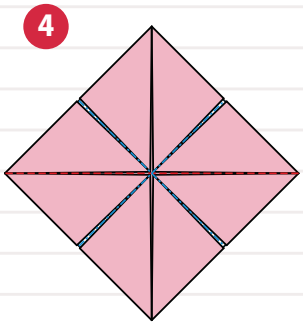
Folding Tips

The essential procedure for this model is quite similar to that for the Cicada or the Japanese Horned Beetle featured in *Fantastic Origami Flying Creatures*, but I published this book first, so I've dubbed this the "Crab Fold." The procedure is lengthy, but it mainly consists of a repetition of the same steps. I call for applying glue on the inside surfaces after step 10, followed by another round of gluing after step 38. The particular type of sheet used for this creation is a little tough to glue together, so pay attention when going through the process. When executing step 38, fold as close to the body as possible to make the legs look longer. During step 47, a deep mountain fold will result in a more realistic shape, as crabs are generally not very long. Lastly, make sure that the bases of the claws do not end up being thicker than the claws themselves. There's a lot going on with this model, but you'll get through it if you focus and follow the steps carefully until the end.

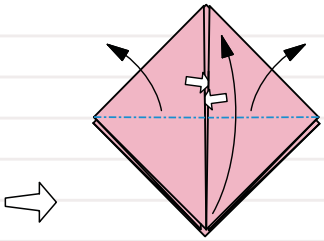




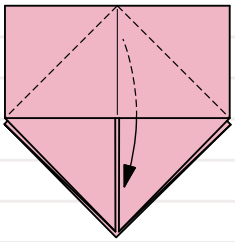




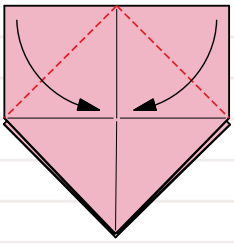
Fold a Preliminary Base (page 10).

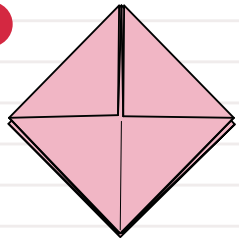


Open out the sides and squash fold.

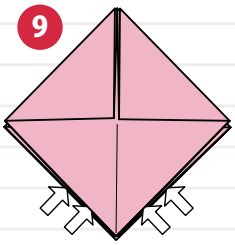


Pull out the flap from the inside.

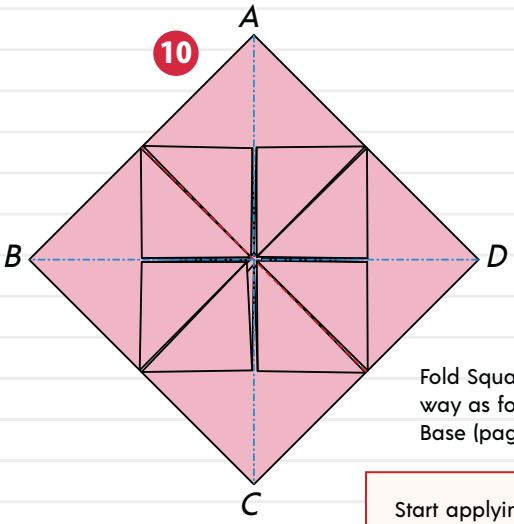




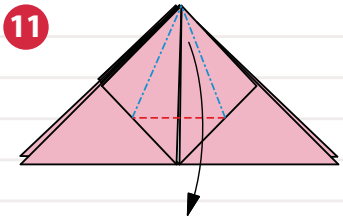
Fold the three other sides in the same way (5–7).



Open out the Preliminary Base formation.

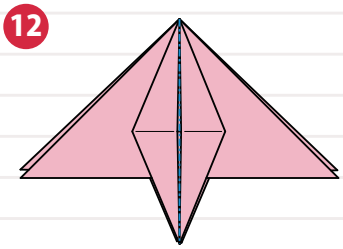


Fold Square ABCD the same way as folding the Waterbomb Base (page 11). Rotate.

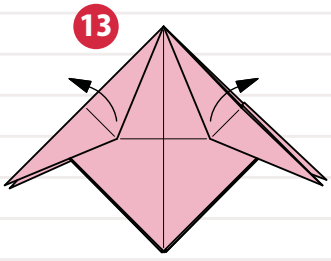


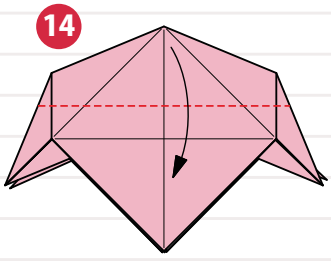
Petal fold (page 10). Fold the three other sides in the same way.

Start applying glue on the inside portions

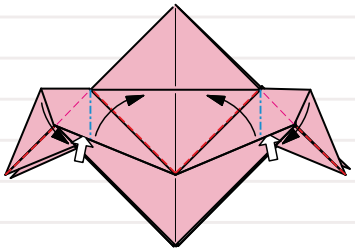


Open out the Waterbomb Base and fold it back into a Preliminary Base formation.

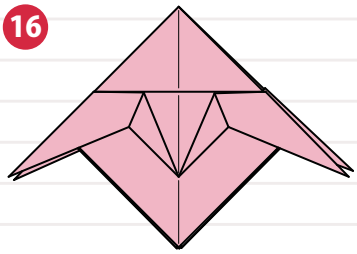




15

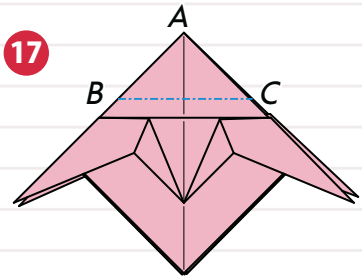


16



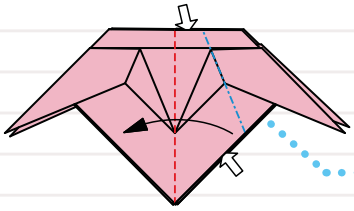
Fold the three other sides in the same way (13–15).

17



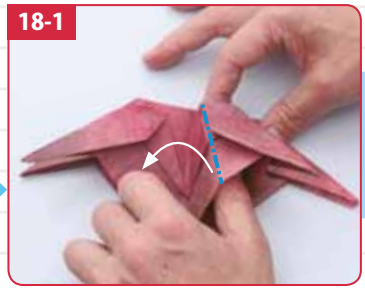
Sink down triangle ABC about 1/4 of its height.

18



Open up in the direction of the white arrows and squash the flap. The hidden layer will also need to squash flat.

18-1



Insert your fingers from both sides, and fold while opening up.

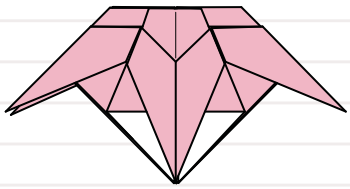
18-2

The fold in progress.

18-3

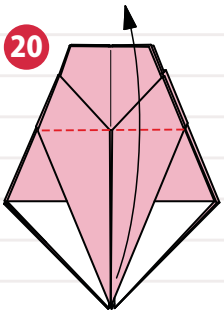
The structure after the fold.

19

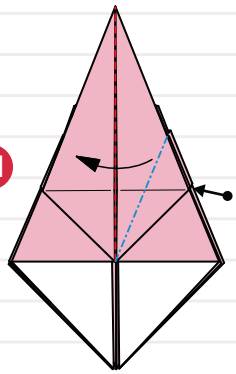


Fold the three other sides in the same way.

20

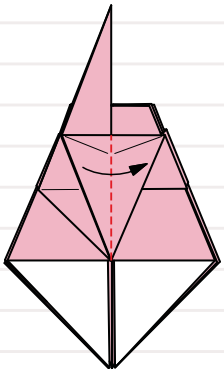


21



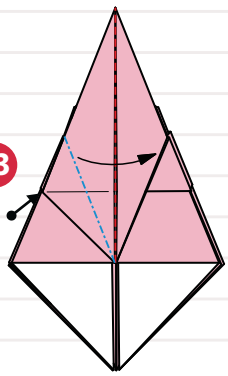
Squash and fold the portion indicated by the dot-terminated arrow.

22



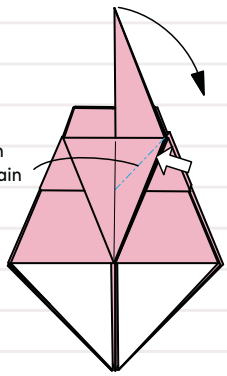
Swing a flap over.

23

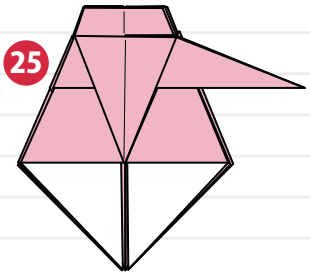


Squash the other side as well.

24

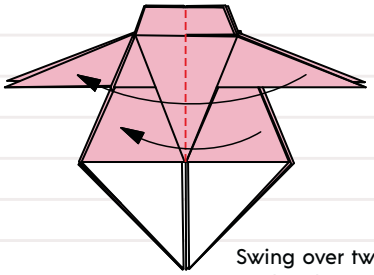


25



Fold the three other sides in the same way (20–24).

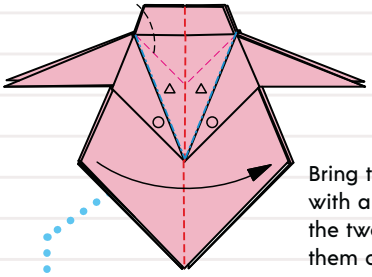
26



Swing over two flaps at each side to make the model symmetrical.

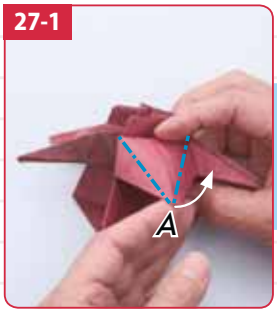
27

Hidden valley fold.



Bring together the two triangles with a valley fold and pinch the two circles so as to draw them out in front.

27-1



Lift corner A to create two mountain folds.

27-2

Valley fold down the center.

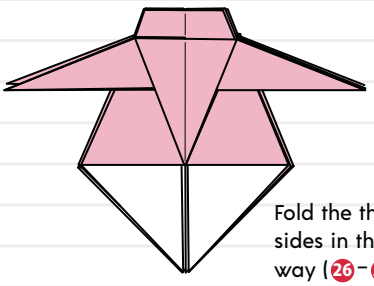
27-3

Pinch and fold toward each other.

27-4

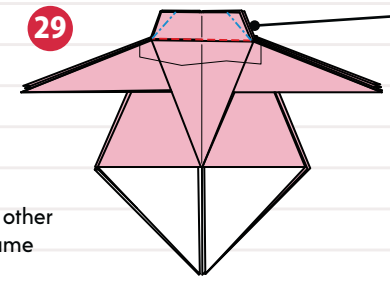
Fold and tilt toward the right.

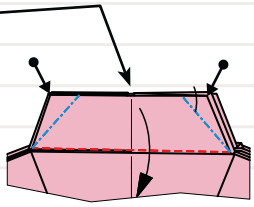
28



Fold the three other sides in the same way (26–27).

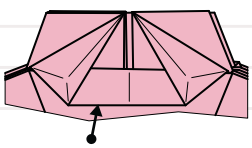
29





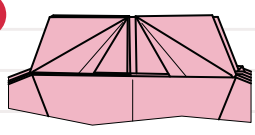
Squash in the direction indicated by the dot-terminated arrows and fold.

30



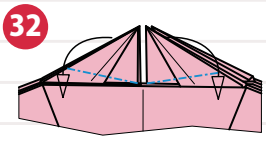
Tuck the indicated part inside.

31



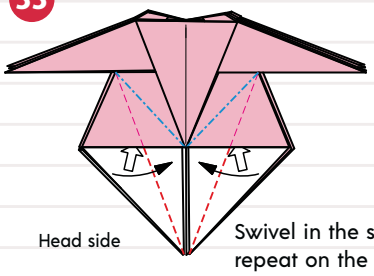
Fold the three other sides in the same way (29–30).

32



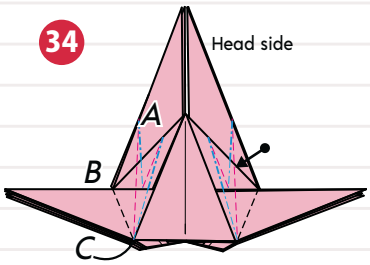
Reverse fold for all four flaps.

33



Swivel in the sides and repeat on the three other sides. Rotate the model 180 degrees.

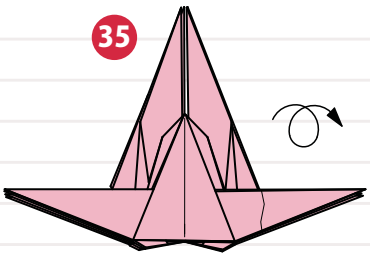
34



Sink triangle ABC. Do the same with the other side.

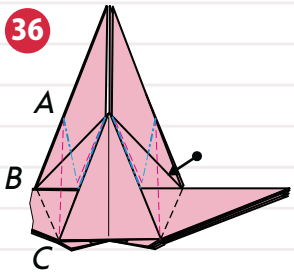
End of the basic folds

35



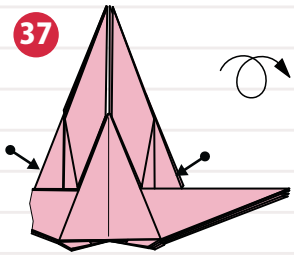
Turn over.

36



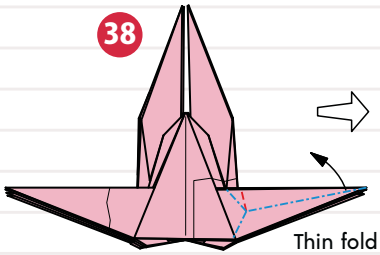
Sink triangle ABC. Do the same with the other side.

37



Repeat step 36 on the inner flaps. Turn over.

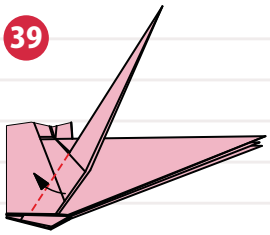
38



Apply glue for the second time

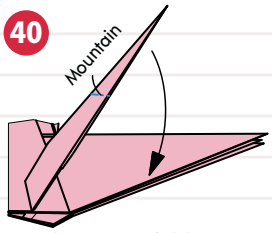
Thin fold the flap.

39



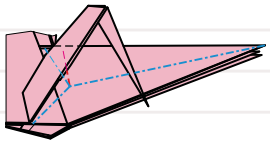
Valley fold both sides of the flap over.

40



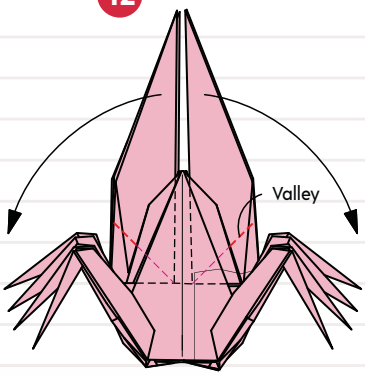
Inside reverse fold.

41

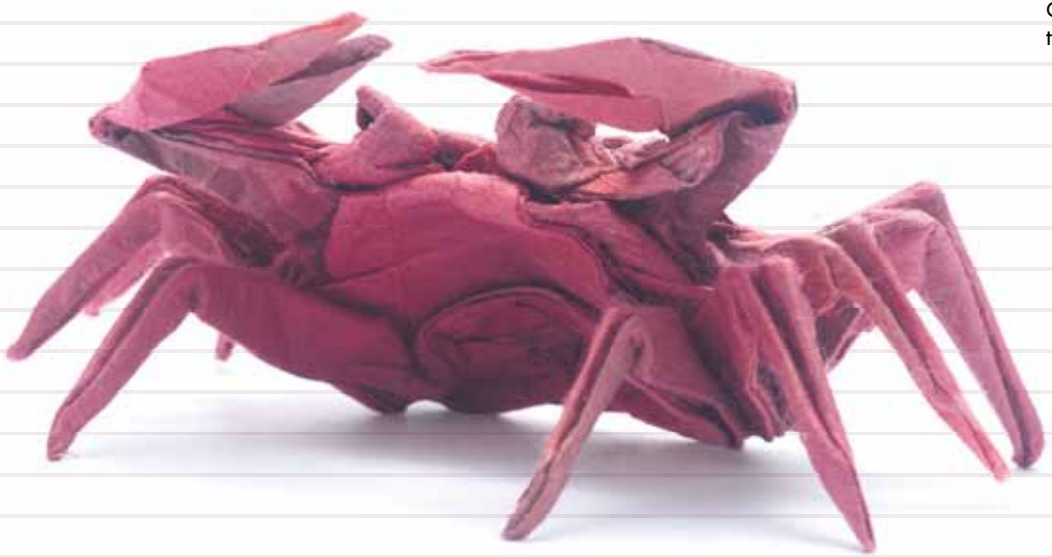


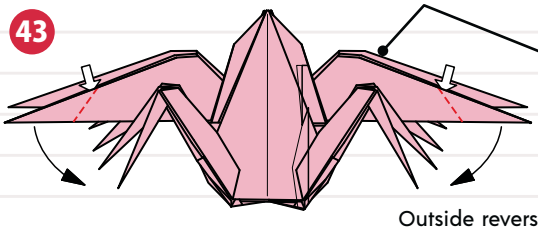
Fold all the other legs in the same way (38–40).

42

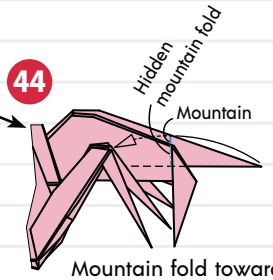


Outside reverse fold the four flaps.

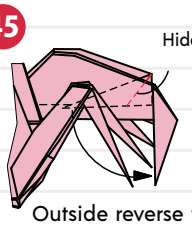




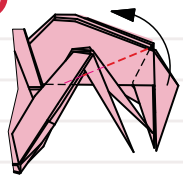
43 Outside reverse fold.



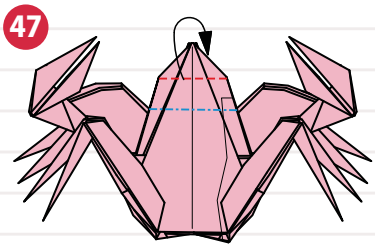
44 Mountain fold toward the back. Do the same on the other side.



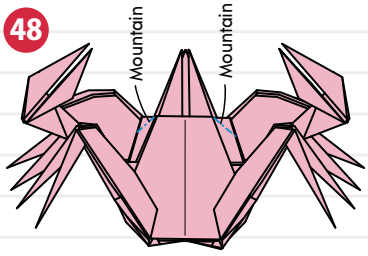
45 Outside reverse fold. Do the same on other side.



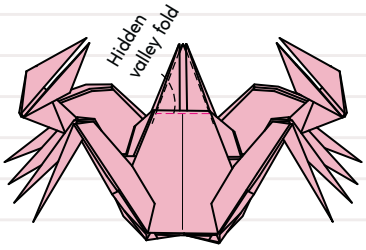
46 Fold both flaps simultaneously. Do the same with the other side.



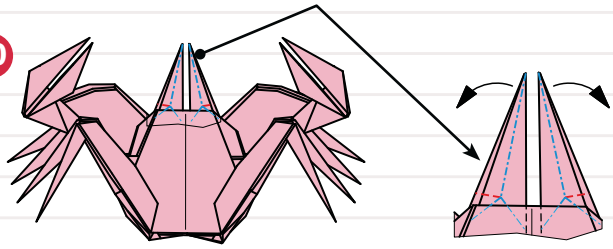
47



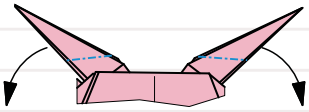
48



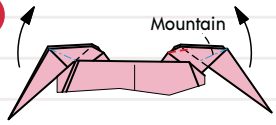
49 Tuck in the back.



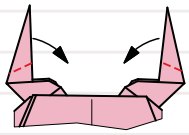
50 Thin fold the flaps.



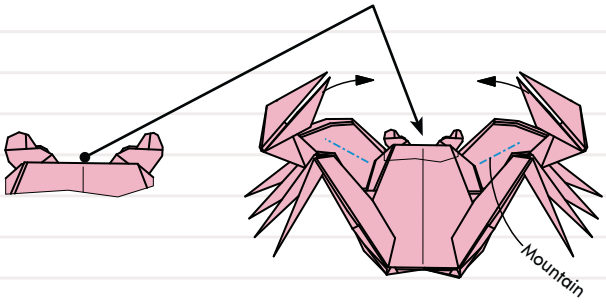
51 Inside reverse fold.



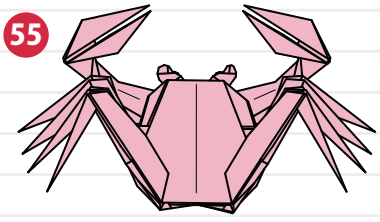
52 Inside reverse fold.



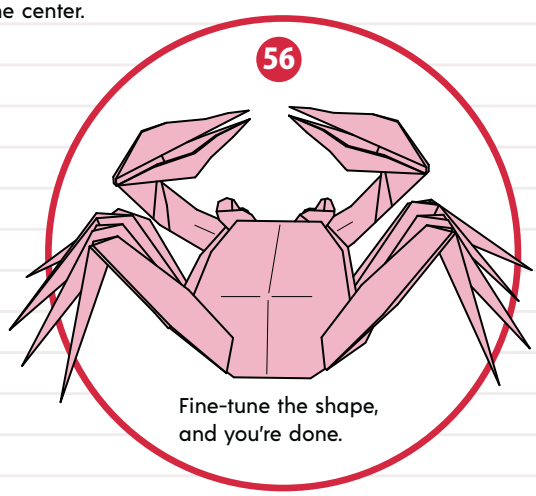
53 Outside reverse fold.



54 Outside reverse fold. Thin the arms for the claws, and pull both arms toward the center.



55



56 Fine-tune the shape, and you're done.

Difficulty: ★★★★½

MARINE ISOPOD

Type of paper used:

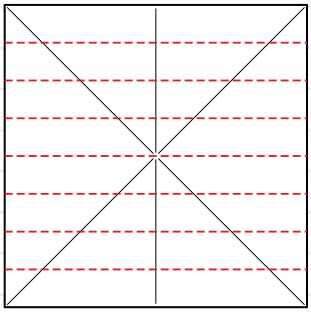
- Handmade Washi (momigami)
- 12¼ x 12¼ inch (31 x 31 cm)
- 1 sheet

Folding Tips

To make the model in the photograph above, I used a relatively coarse type of paper called "momigami," which is a durable material that doesn't have the tendency to rip at the corners during folding. If you seek this type of paper out, it might take some time to find a suitable sheet, as wrinkles and uneven sides are common. As a last resort, you can soak a wrinkled sheet of momigami paper in water and spread the wrinkles flat while it dries to prepare it for folding.

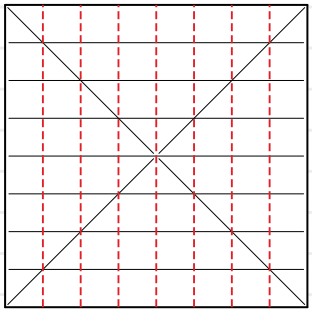
This model does not start with a base, but up until step 30 it should be fairly simple to follow the diagrams faithfully. Step 31 involves pulling the antennae and the legs toward the head, balancing the overall shape. This is also the point at which the lengths of the legs can be adjusted. Apply glue during this step. However, during step 40, we will further shape the segments of the back, so avoid spreading glue on these parts as well as on the stomach.

1



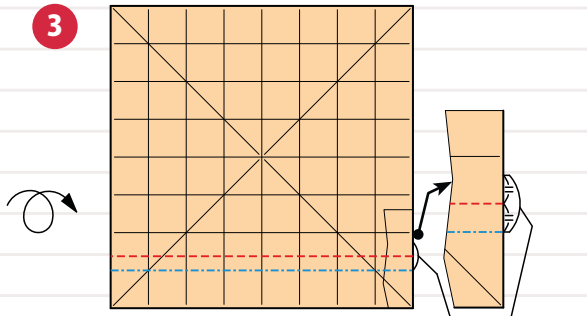
Crease with valley folds to make eight equal segments.

2



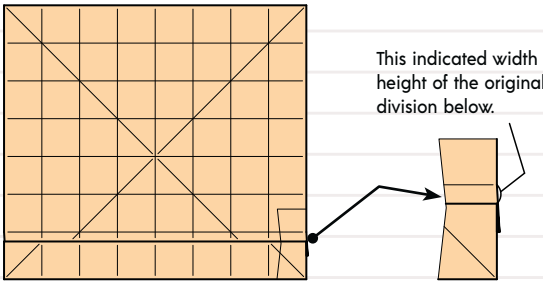
Crease vertically in the same way. Turn over.

3



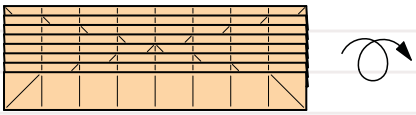
Fold along the existing mountain fold and pleat upward at about 1/3rd the height of the division above.

4

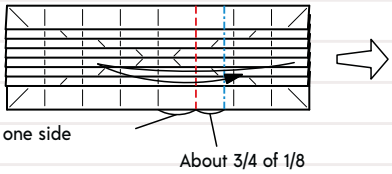


Repeat the pleating process six more times using the existing mountain fold lines.

5

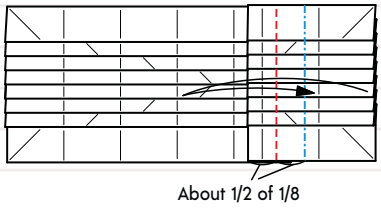


6

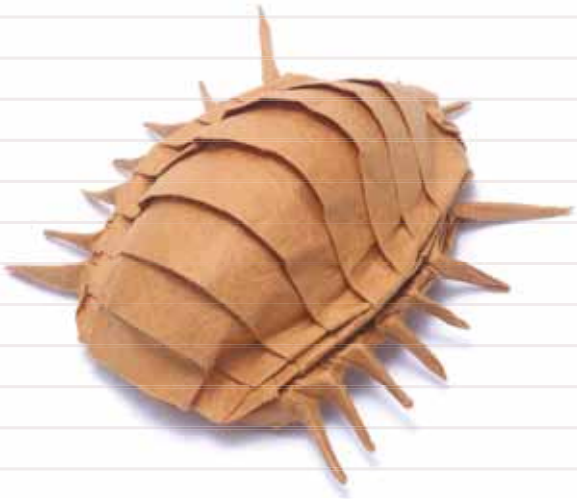


Valley fold along the existing 1/8 crease and pleat back leaving about a 1/3rd gap from the center.

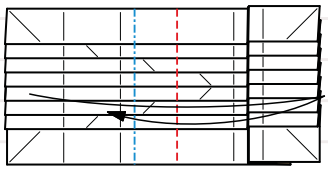
7



Pleat fold. Place the mountain fold first at 1/2 the width from the original center crease. The valley fold falls at the halfway point between the two folded edges.

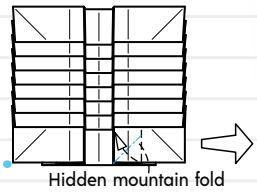


8



Fold the other side in the same way (6 – 7).

9

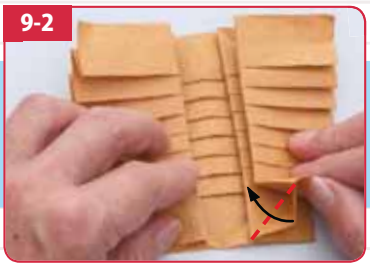


Reverse fold the hidden corner.

9-1

Open up in the direction of the white arrow.

9-2

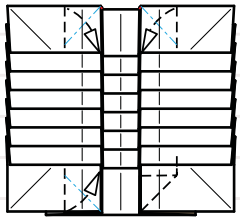


Reverse fold.

9-3

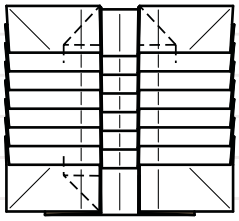
Close.

10

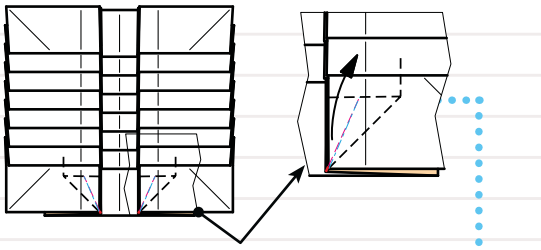


Fold the three other parts in the same way.

11



12

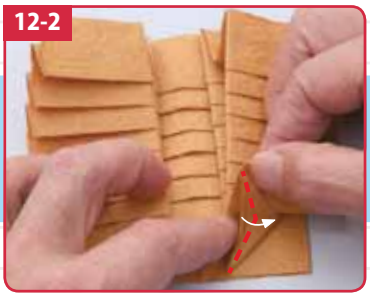


Reverse fold the hidden edge along the angle bisector.

12-1

Open up in the direction of the arrow.

12-2

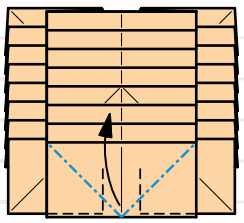


Reverse fold.

12-3

Close. Do the same with the left side. Turn over.

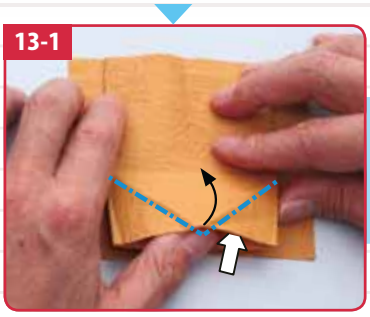
13



Raise the edge up to reverse fold in and then out again.

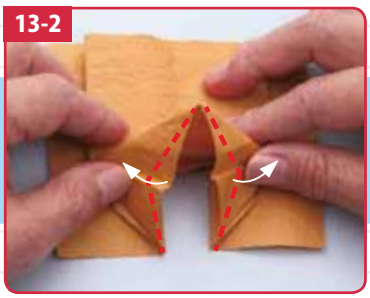
End of the basic folds

13-1



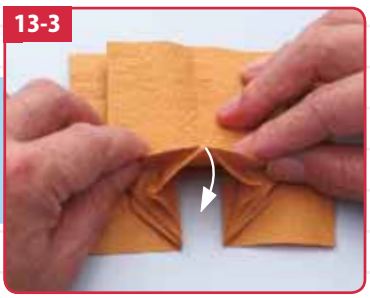
Open up in the direction of the arrow and reverse fold the sides inward.

13-2



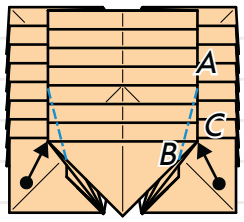
Reverse fold outward.

13-3



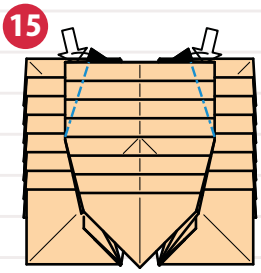
Close.

14



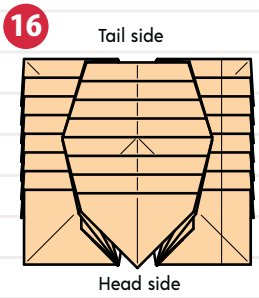
Sink triangle ABC. Repeat on the other side.

15



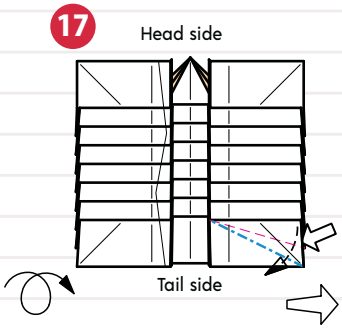
Inside reverse fold both sides.

16

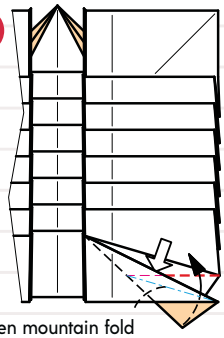


Turn over and rotate.

17

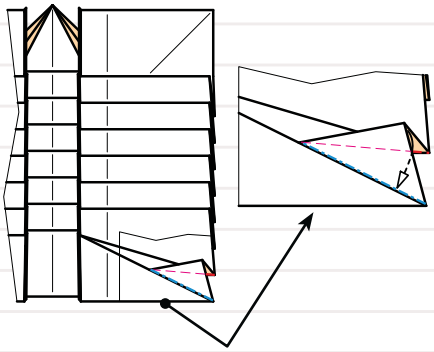


18

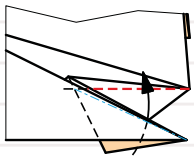


Hidden mountain fold

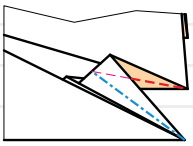
19



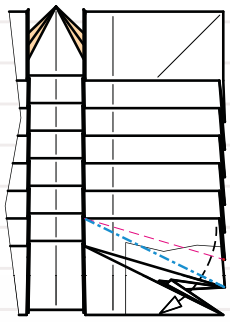
20



21

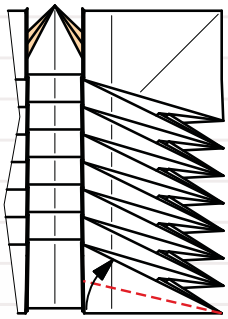


22

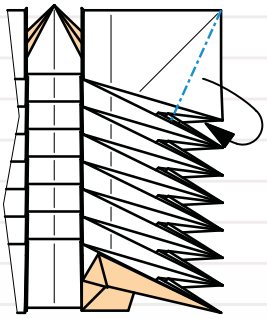


Fold the remaining pleats on both sides in the same way (17–21).

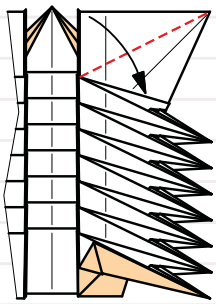
23



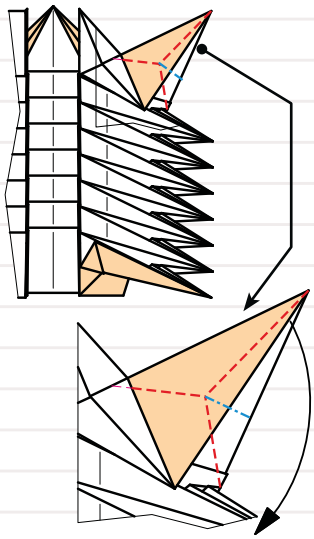
24



25

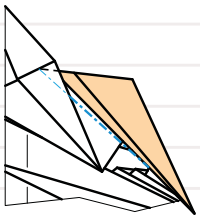


26

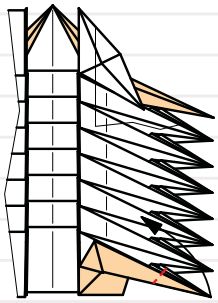


Rabbit ear fold.

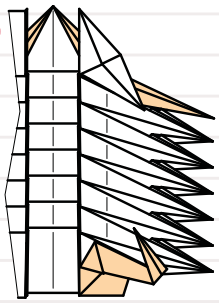
27



28



29

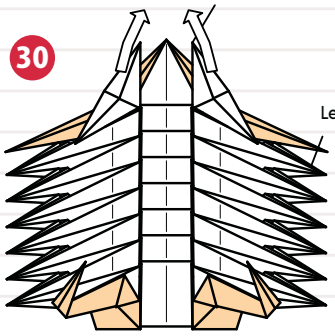


Fold the other side in the same way (23–28).

Corner

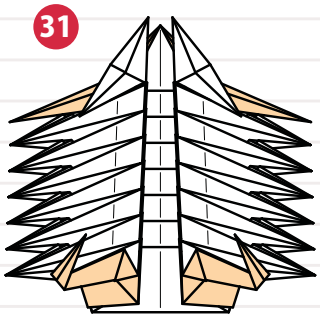
30

Leg

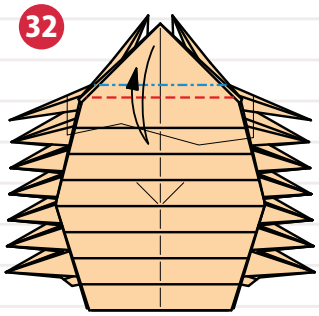


Pull up the two corners (with the seven legs) so they extend beyond the top point.

31



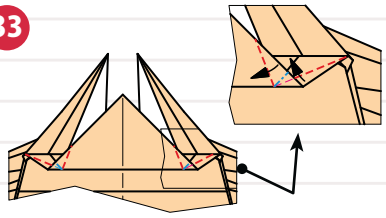
32



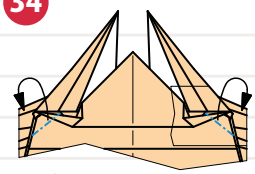
Pleat fold.

Apply glue except for on the back and stomach, as explained in the introduction

33

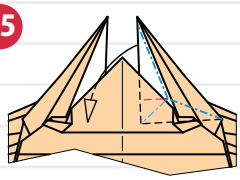


34



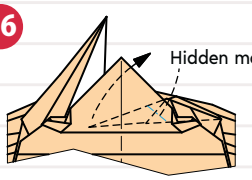
Tuck in.

35

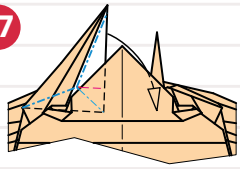


Thin fold the flap.

36

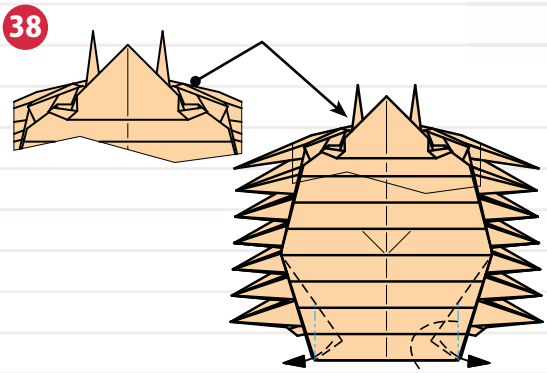


37



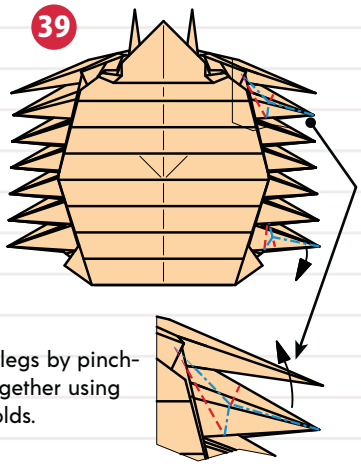
Fold the other side in the same way (36–35).

38



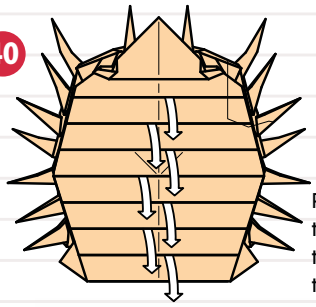
Reverse fold.

39



Thin all the legs by pinching them together using mountain folds.

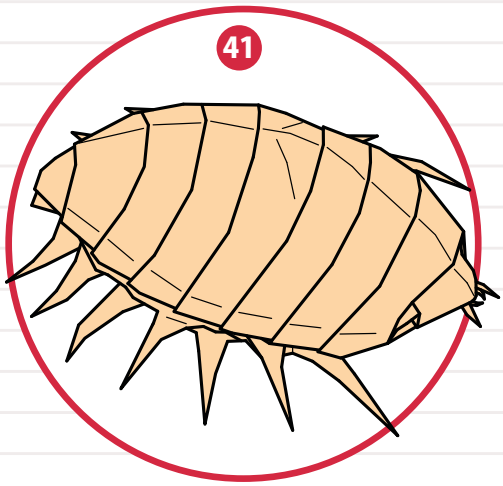
40



Pull out the segments on the back and shape them to make the body look three dimensional.

Optionally, stuff cotton or tissue into the cavity for a more solid shape.

41



Fine-tune the shape, and you're done.

Difficulty: ★★½

SQUID

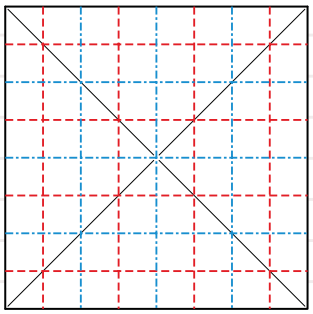
Type of paper used:

- Washi
- 12¼ x 12¼ inch (31 x 31 cm)
- 1 sheet

Folding Tips

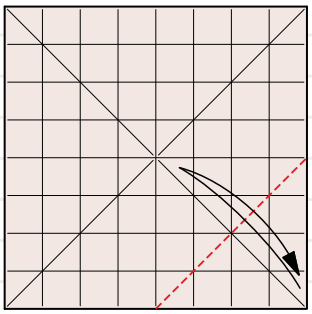
The 8-division pleat fold is applied to this creation to generate 5 corners on each side, allowing for 10 corners in total. Modifying the corners into tentacles facilitates the creation of a squid, which is where the original idea came from. The tentacles are folded in the same way as the Crocodile's claws (page 58), but we added another step here (step 14, to be specific), to create very thin structures. You should apply the glue after step 20 when the squashing maneuvers of steps 16 and 18 are complete, but make sure not to spread glue onto the back part hanging between the tentacles. Step 37 is performed to make the tentacles appear longer, by simultaneously valley folding 5 at a time. The final step should include the gluing of each of the 10 tentacles, allowing the structure to stand on its own.

1



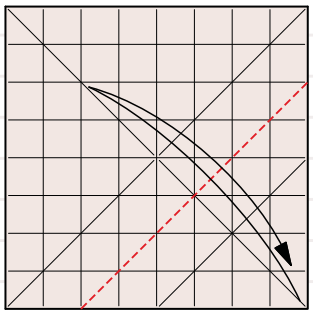
Crease the paper by pleating into eighths in both directions. Turn over.

2



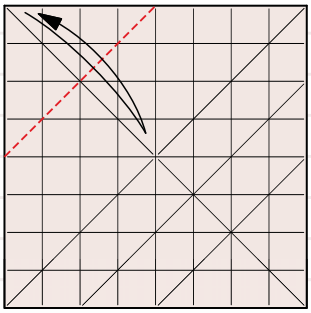
Crease the corner.

3



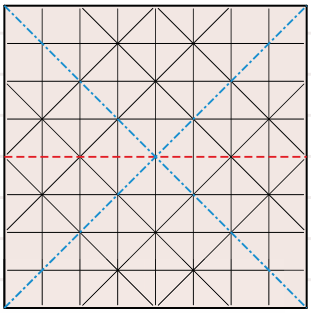
Crease again.

4



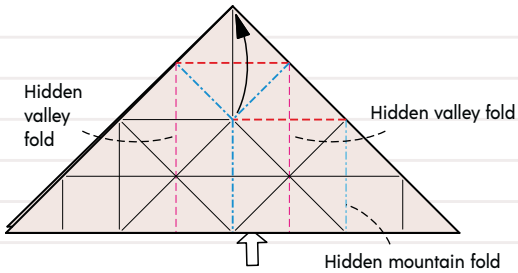
Fold the other three corners in the same way (2–3).

5



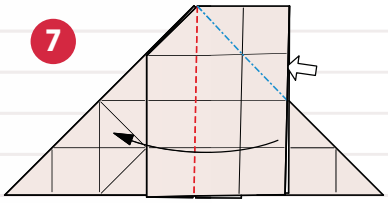
Fold into a Waterbomb Base (page 11).

6



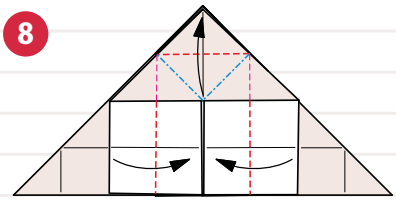
Pinch the top layer in half along its center, allowing its sides to squash fold flat. Swing the resulting flap over to the right.

7

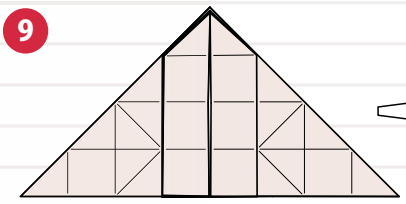


Open up in the direction of the white arrow and squash fold.

8

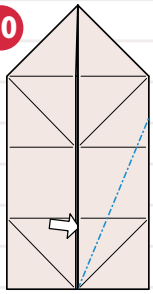


9



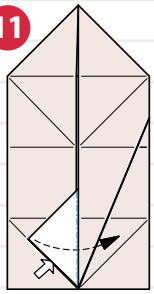
Fold the back side in the same way (6–8).

10

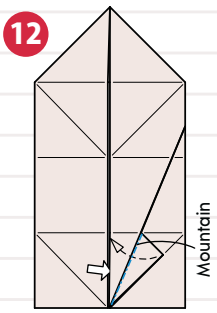


Open up in the direction of the arrow and inside reverse fold.

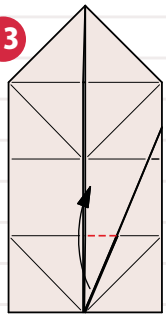
11



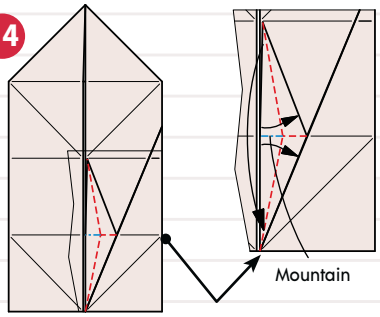
Open up in the direction of the white arrow and inside reverse fold.



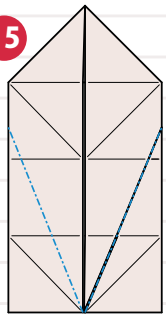
12 Open up in the direction of the white arrow and reverse fold.



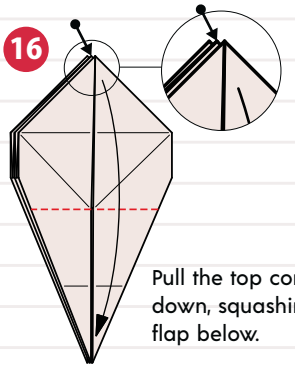
13



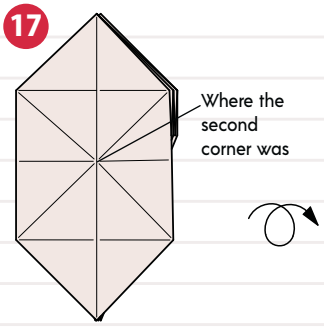
14 Fold back down while reverse folding. The back side of the paper will appear after folding.



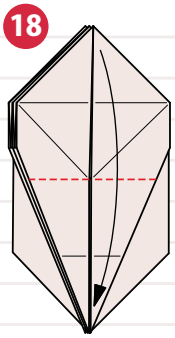
15 Fold the seven other parts in the same way (10–14).



16 Pull the top corner down, squashing the flap below.

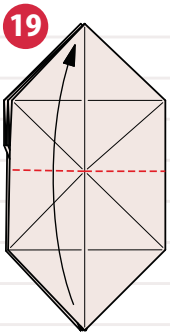


17

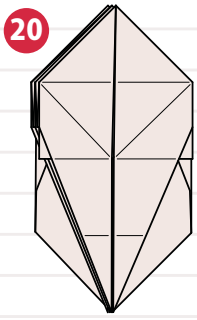


Repeat step 16.

18

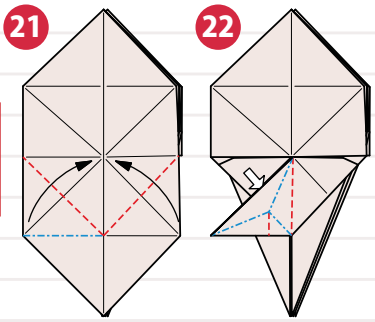


19 Swing one flap up.

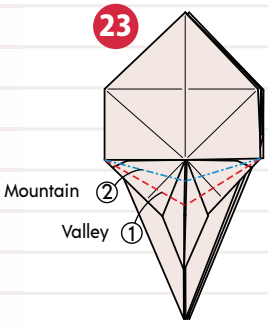


20

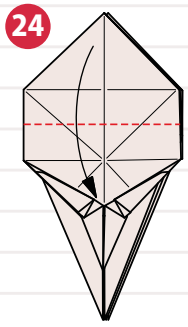
Start applying glue on the non-visible back sides



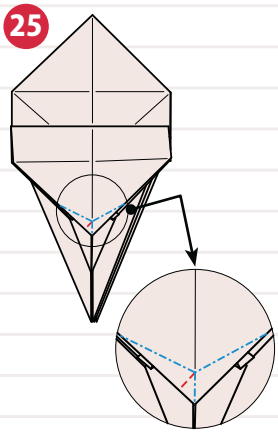
21 22 Squash fold, and then petal fold (page 10).



23 Pleat the sides.



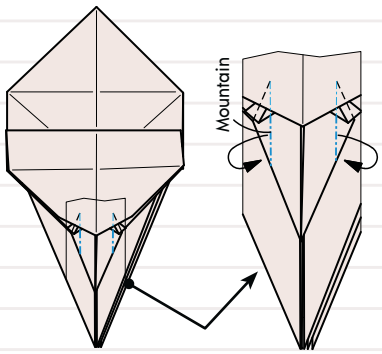
24



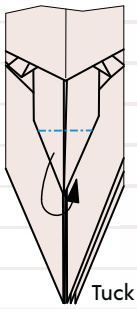
25 Rabbit ear fold.

End of the basic folds

26

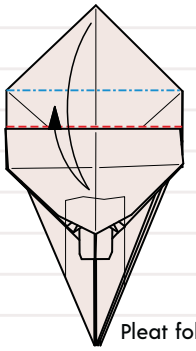


27



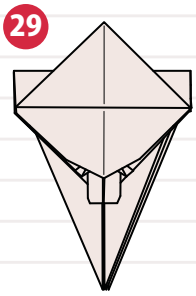
Tuck inside.

28

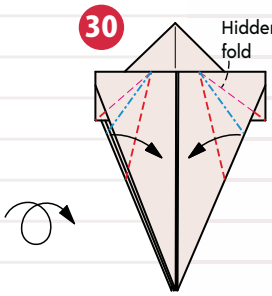


Pleat fold.

29

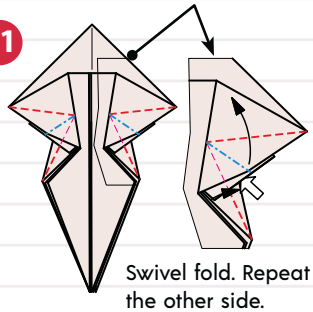


30



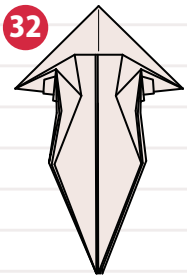
Crimp the sides inward, squash folding at the corners.

31

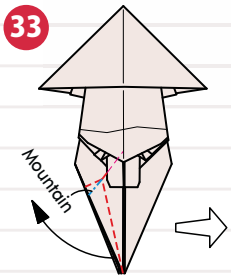


Swivel fold. Repeat on the other side.

32

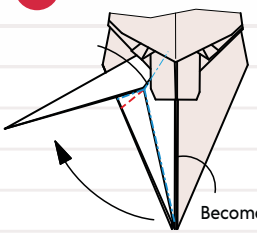


33



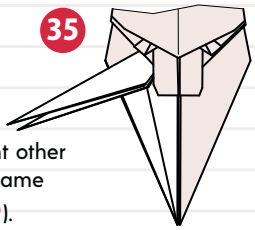
Rabbit ear fold.

34



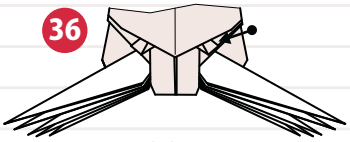
Thin fold.

35



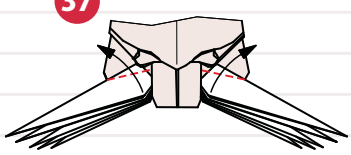
Fold the eight other flaps in the same way (33–34).

36



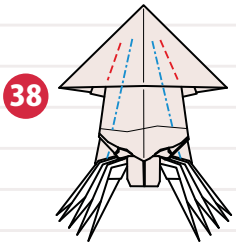
Round the eyes.

37



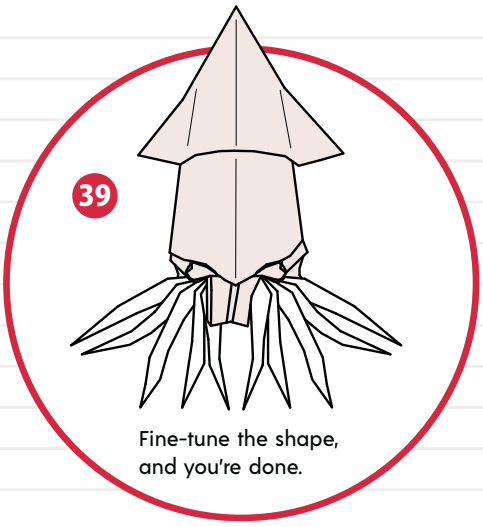
Fold the five tentacles simultaneously on either side.

38



Pull the tentacles inward, and encourage a cylindrical shape in the mantle with soft mountain folds.

39



Fine-tune the shape, and you're done.

Difficulty: ★★½

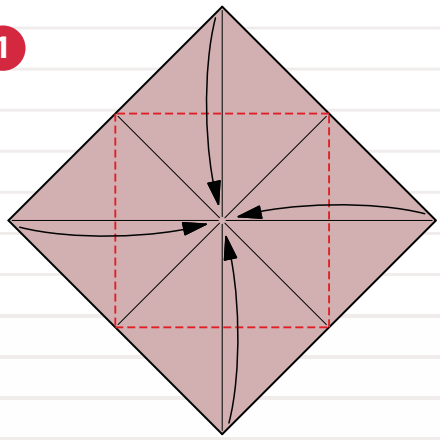
OCTOPUS

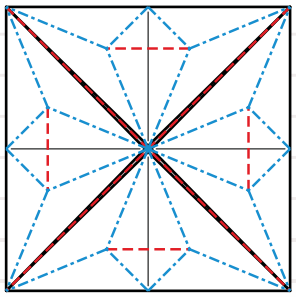
Type of paper used:

- Handmade Washi
- 12¼ x 12¼ inch (31 x 31 cm)
- 1 sheet

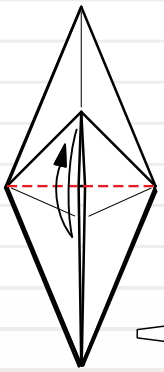
Folding Tips

The series of photos that describe step 4 show the paper opened out to be rearranged, but it differs to the Wrap and Reform Layers maneuver introduced at the bottom of page 9. During step 9, you'll perform a squashing procedure, and two triangles should form as seen in step 10. Steps 10–12 are rather challenging, but at step 14, eight tentacles will be formed. Begin to apply glue at this stage. Refer to page 12 to for details about applying glue and then returning your model to its original shape. Step 16 is where the model really comes to life. Apply glue to the inner sides of the tentacles to give them lively, curving shapes. In addition, tilting the head downward and shaping some of the folds into eyes will add pleasing realism to your finished model.

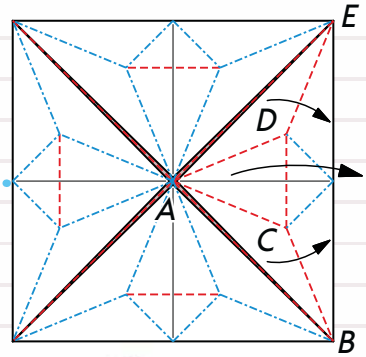




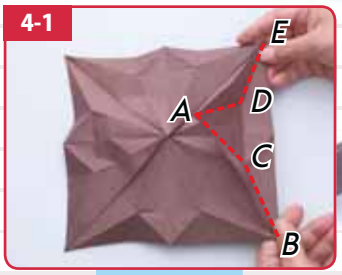
Fold into a Frog Base (page 10).



Valley fold the small flaps at each side and return to the state of step 2.



Open out the top layer while reforming the Frog Base. This flap then gets squash folded and petal folded.

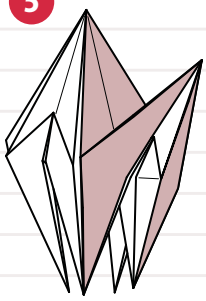


Create four valley folds and form the petal fold.

Step 4 in progress.

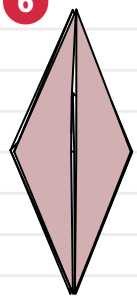
Continue folding.

5



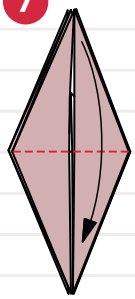
Step 4 in progress.

6



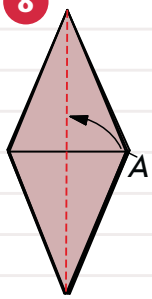
Fold the three other sides in the same way.

7



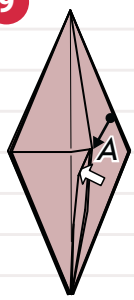
Fold the three other sides in the same way.

8



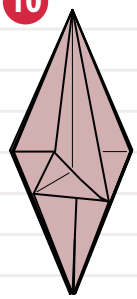
Lift corner A up vertically.

9



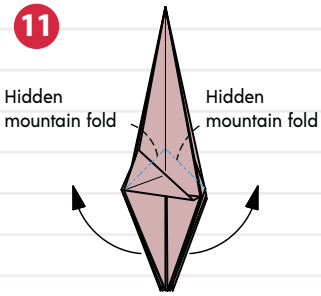
Squash fold corner A and the raised flap above in the direction indicated by the dot-terminated arrow.

10



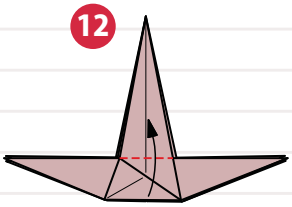
Fold the seven other sides in the same way, and arrange them symmetrically.

11

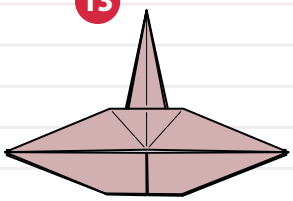


Reverse fold the eight tentacles.

12

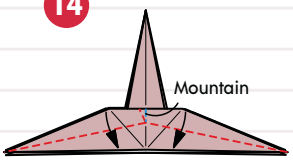


13



Fold the other sides in the same way.

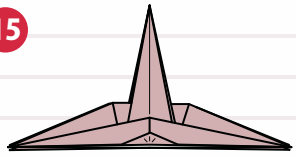
14



End of the basic folds

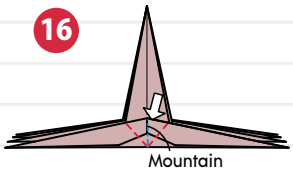
Start applying glue on the back sides of the tentacles

15



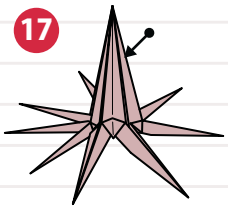
Fold the other sides in the same way.

16



Open up in the direction of the white arrow to give the structure a three-dimensional shape.

17



Add volume to the body by blowing air into it like you would with a balloon.

18

Fine-tune the shape, and you're done.

GIANT SQUID

Difficulty: ★★★

Type of paper used:

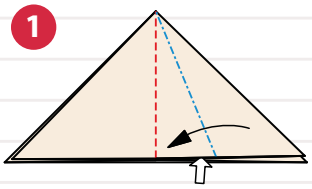
- Handmade Washi
- 15¾ x 15¾ inch (40 x 40 cm)
- 1 sheet

Folding Tips

Giant Squid are a popular subject of fascination, and like their tentacles, there are a few things we have to keep an eye on when folding this model. First of all, the basic folds method is entirely different from the "ordinary" Squid (page 94).
The two long tentacles are folded at the beginning, followed by the smaller ones. If you find it difficult to maneuver around the long tentacles, fold them back until the end. The outside reverse fold in step 25 is challenging to perform, and so I recommend that you angle the long tentacles outward to facilitate folding. Start applying glue at step 37, this time on both sides, only omitting the areas where folding is necessary to give the tentacles their shape. Spreading the tips of the long tentacles gives them a more realistic look, so avoid spreading glue on these parts as well. To finish, orient the small tentacles in such a way that all eight of them are visible when the model is viewed from the front.

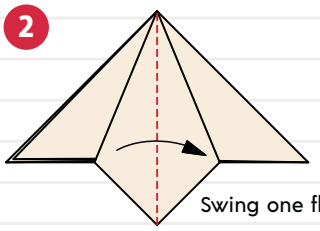
Start from the Waterbomb Base (page 11)

1



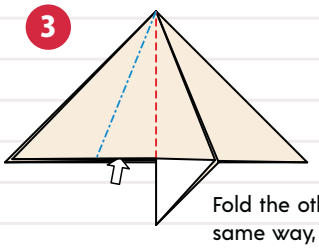
Open in the direction of the white arrow and squash fold.

2



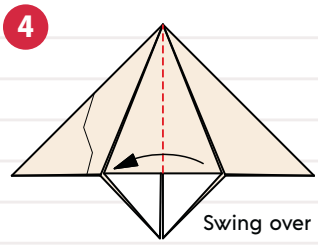
Swing one flap over.

3



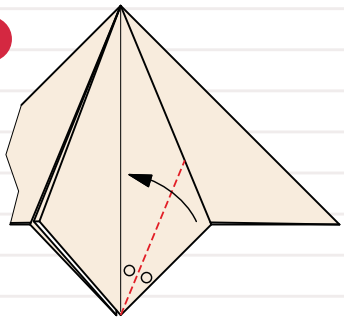
Fold the other side in the same way, making the model symmetrical.

4

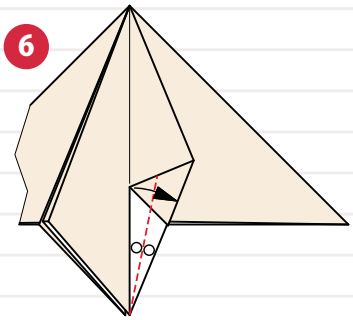


Swing over one flap.

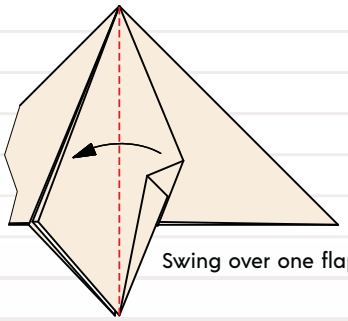
5



6

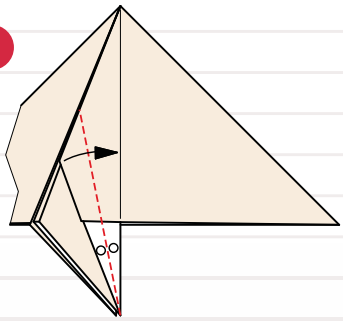


7



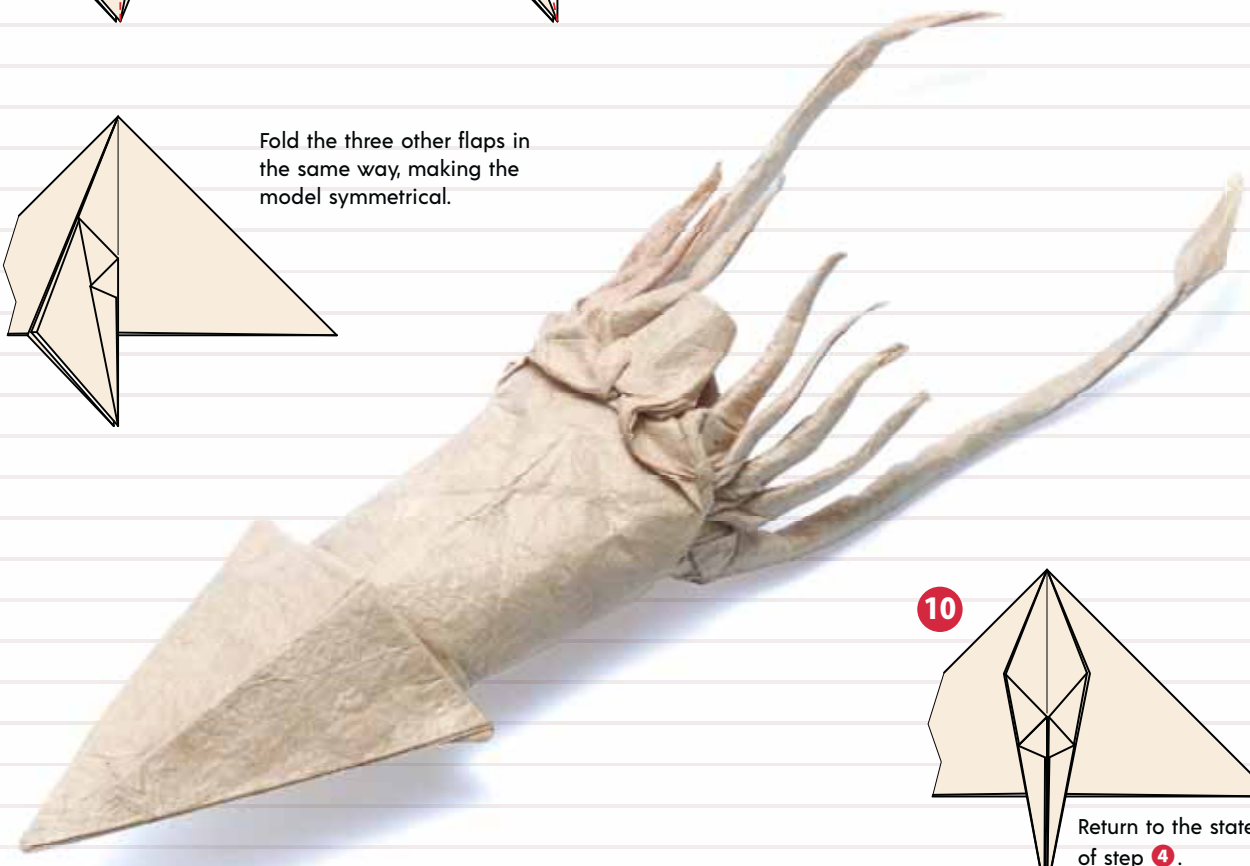
Swing over one flap.

8

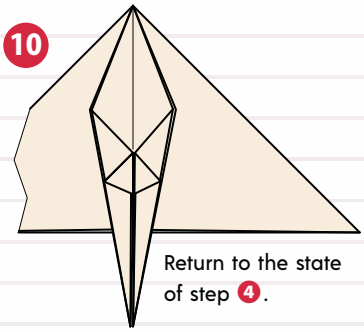


9

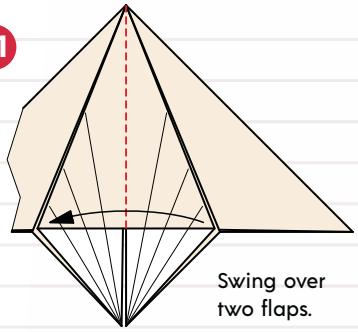
Fold the three other flaps in the same way, making the model symmetrical.



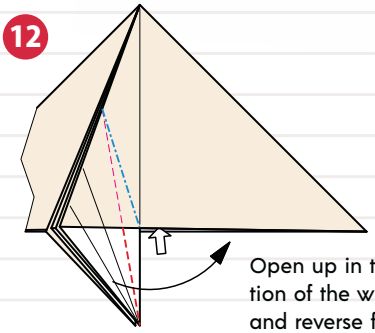
10



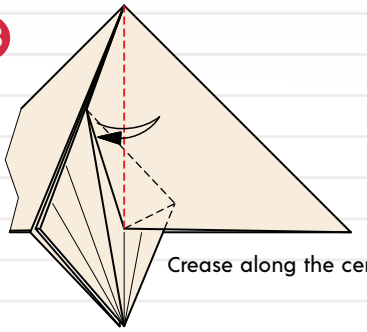
Return to the state of step 4.



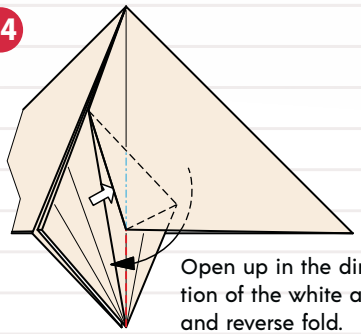
11 Swing over two flaps.



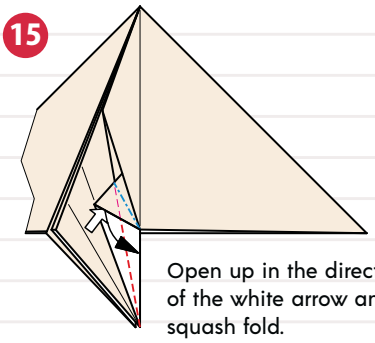
12 Open up in the direction of the white arrow and reverse fold.



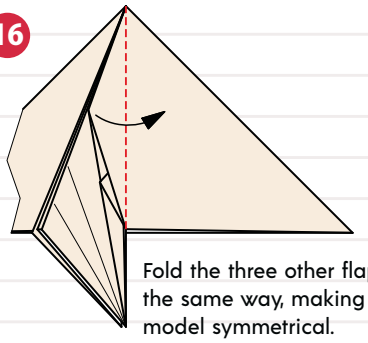
13 Crease along the center.



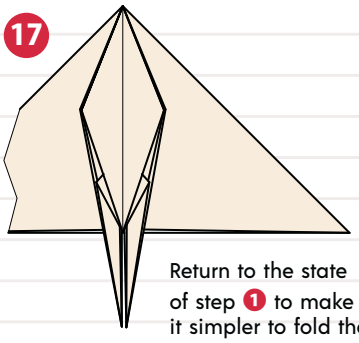
14 Open up in the direction of the white arrow and reverse fold.



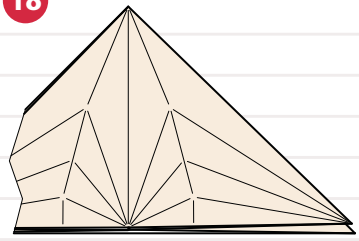
15 Open up in the direction of the white arrow and squash fold.



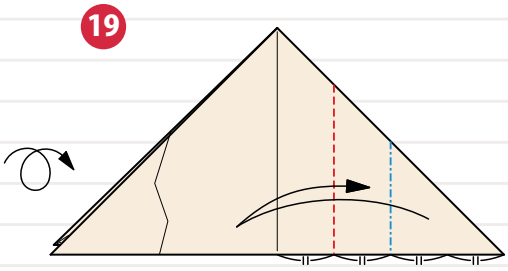
16 Fold the three other flaps in the same way, making the model symmetrical.



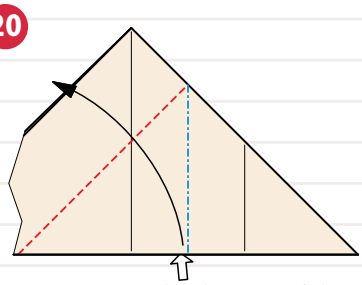
17 Return to the state of step 1 to make it simpler to fold the two long tentacles.



18

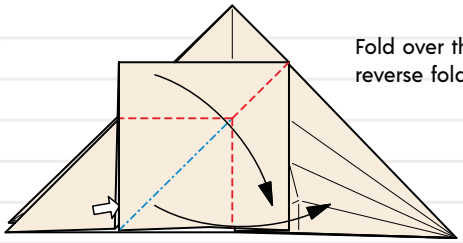


19 Crease, using mountain and valley folds along the indicated divisions.



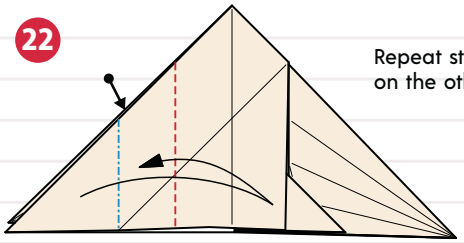
20 Open up in the direction of the white arrow and squash fold.

21



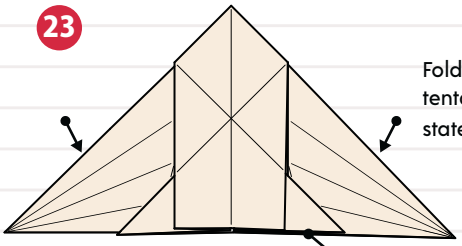
Fold over the flap while reverse folding.

22



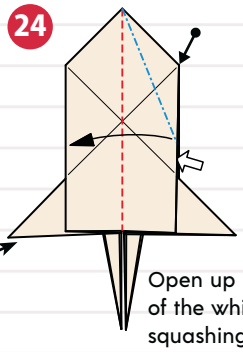
Repeat steps 19–21 on the other side.

23



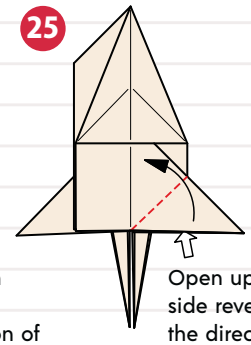
Fold the two long tentacles back to the state of step 17.

24



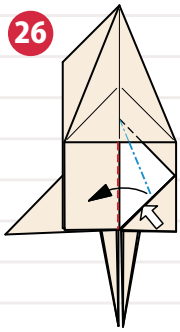
Open up in the direction of the white arrow while squashing in the direction of the dot-terminated arrow.

25



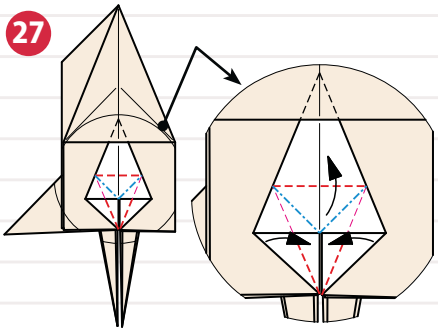
Open up and outside reverse fold in the direction of the white arrow.

26



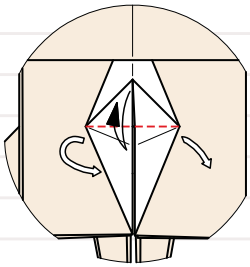
Open up in the direction of the white arrow and squash fold.

27



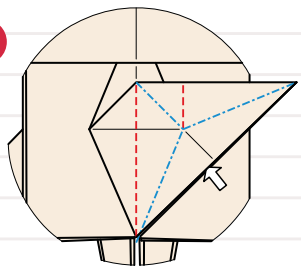
Petal fold up.

28



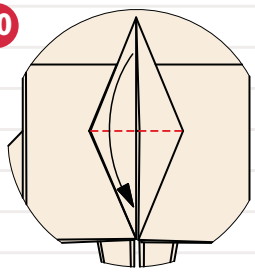
Wrap around and reform the layers (page 9).

29

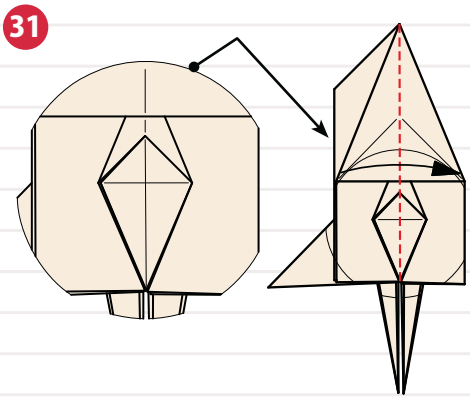


Squash and then petal fold.

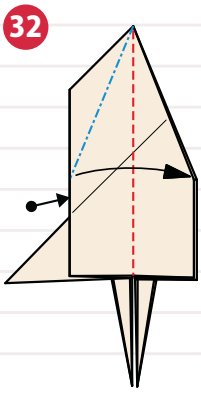
30



31

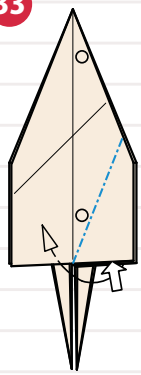


32



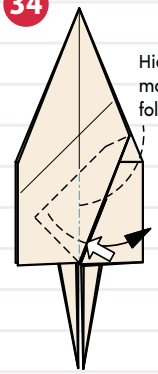
Repeat steps 24–31 on the other side.

33



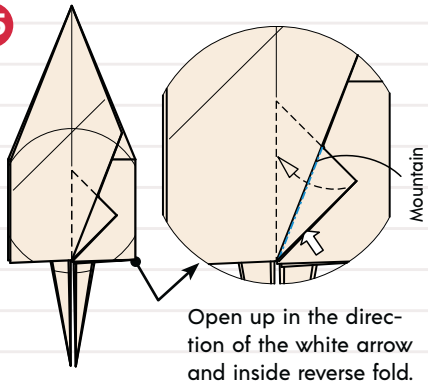
Open up in the direction of the white arrow and inside reverse fold.

34



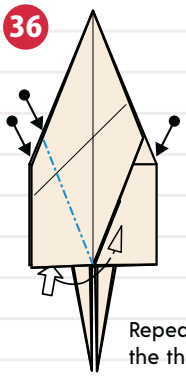
Open up in the direction of the white arrow and reverse fold.

35



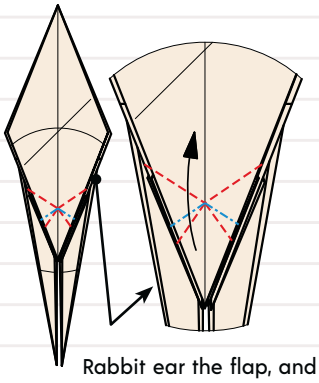
Open up in the direction of the white arrow and inside reverse fold.

36



Repeat steps 33–35 on the three other flaps.

37

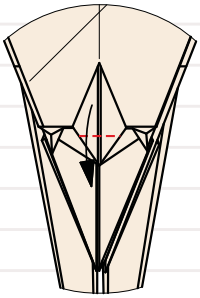


End of the basic folds

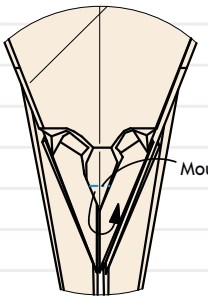
Start applying glue on all the back sides except the two long tentacles

Rabbit ear the flap, and then squash fold it. Tiny squash folds will form at the edges.

38

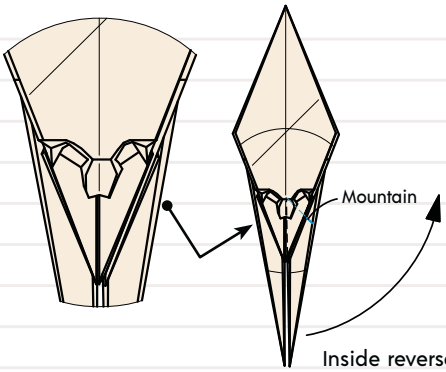


39



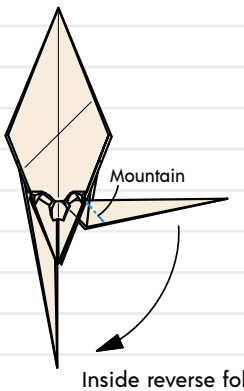
Tuck inside.

40



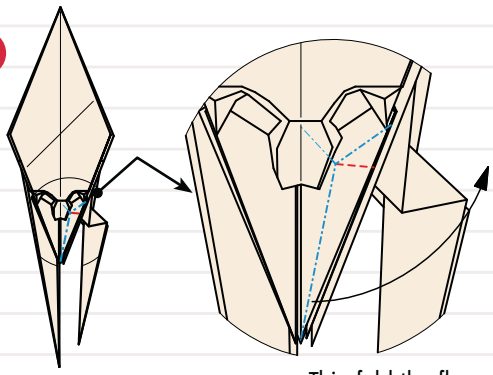
Inside reverse fold.

41



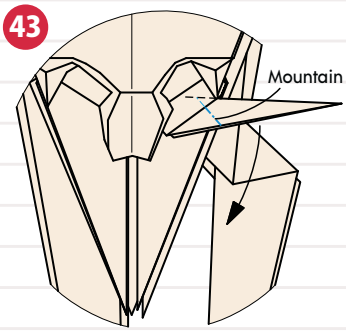
Inside reverse fold.

42

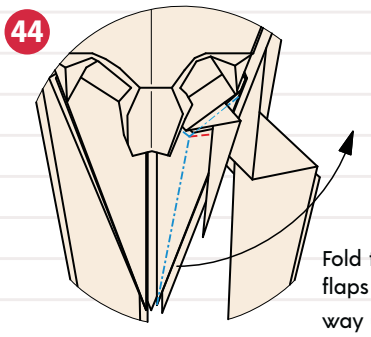


Thin fold the flap.

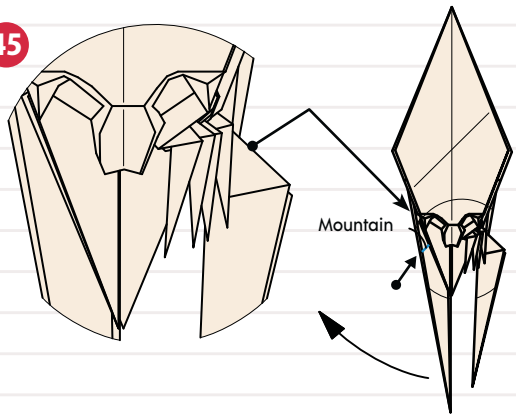
43



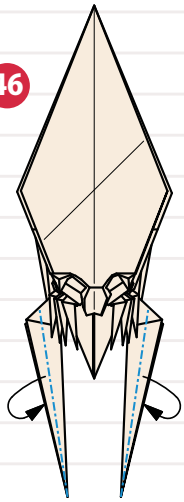
Inside reverse fold.

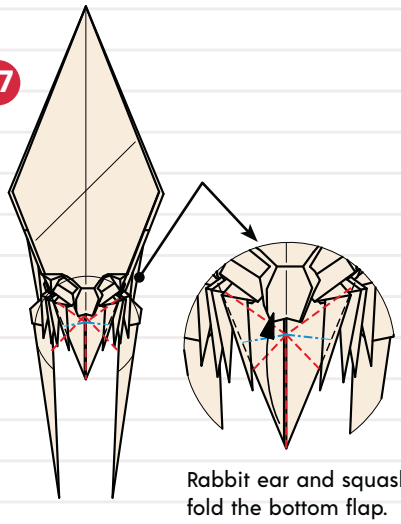


Fold the three other flaps in the same way (42–43).

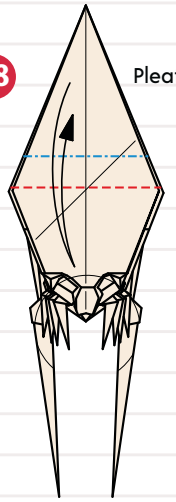


Repeat steps 40–44 on the other side.

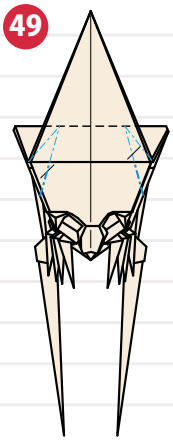




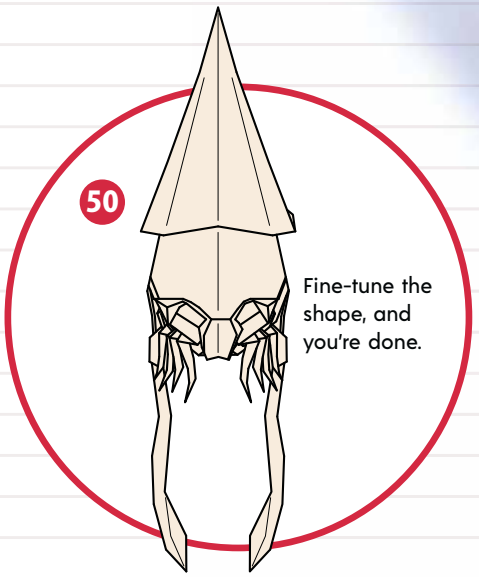
Rabbit ear and squash fold the bottom flap.



Pleat fold.



Swivel fold the sides behind.



Fine-tune the shape, and you're done.

Difficulty: ★★★★★

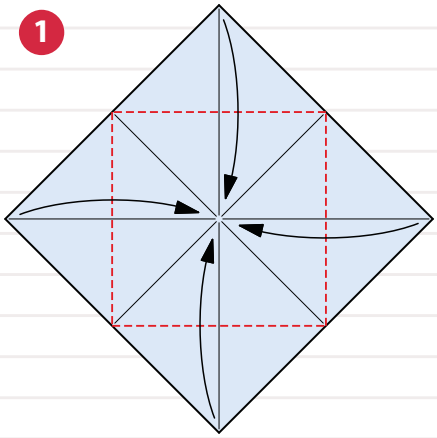
JELLYFISH

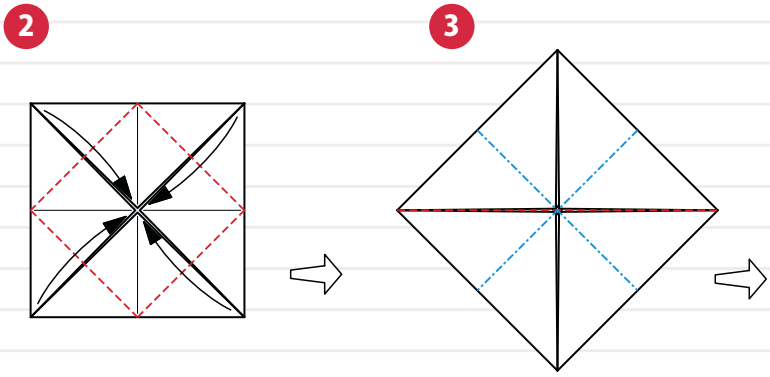
Type of paper used:

- Handmade Washi
- 15¾ x 15¾ inch (40 x 40 cm)
- 1 sheet

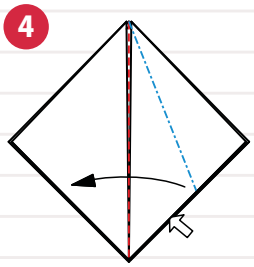
Folding Tips

As with my Praying Mantis model (featured in another one of my books), this model has eight Bird Bases that come together from a single sheet of paper. At step 36, twelve long tentacles and eight short tentacles will have been formed, all from corners of the individual Bird Bases. Begin applying glue to the back sides of the tentacles at step 36. As you fold steps 36–42, the model will become a three-dimensional shape. Refer to the series of photos to achieve a realistic appearance. To add volume to the body, cotton or tissue can be inserted from the underside of the bell. Doing so makes the structure much more stable. If possible, fold the smaller tentacles to make them thinner, which adds to the realism.

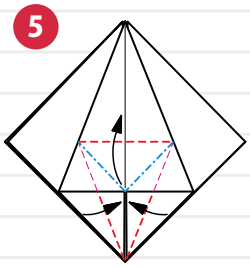




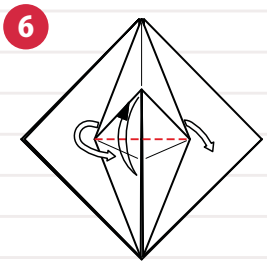
Fold a Preliminary Base (page 10).



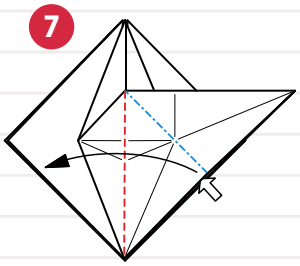
Open up in the direction of the white arrow and squash fold.



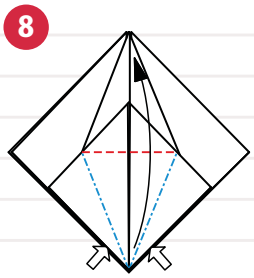
Petal fold (page 10).



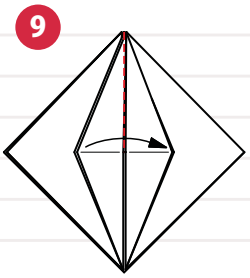
Wrap around and reform (page 9).



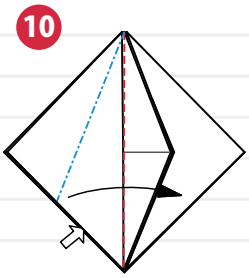
Open up in the direction of the white arrow and squash fold.



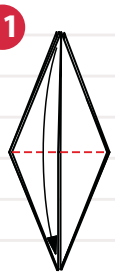
Petal fold.



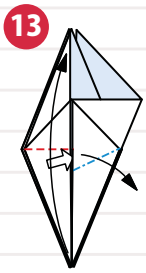
Swing over two flaps.



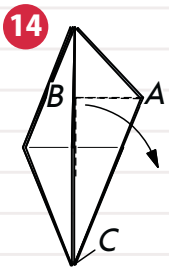
Fold the other three flaps in the same way (4–8).



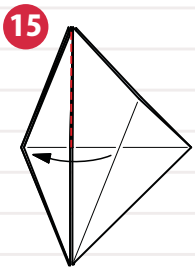
Open up one flap.



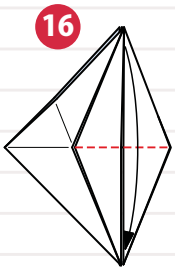
Lift while opening up the bottom side.

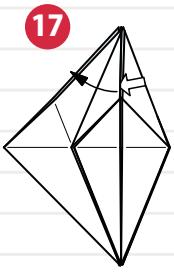


Pull out triangle ABC from the inside.

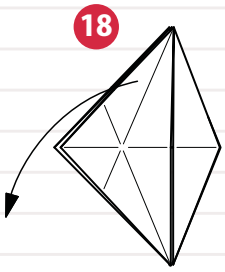


Swing over three flaps.



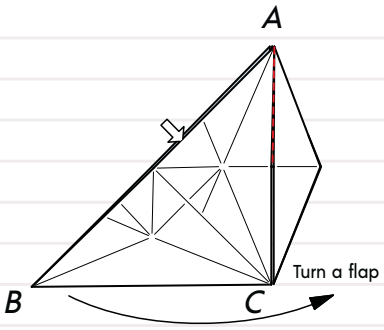


Repeat steps 12–14.



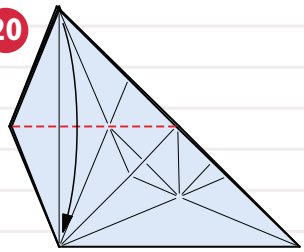
Pull out the trapped corner.

19



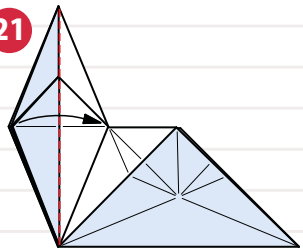
Wrap around triangle ABC. You will have to open the model slightly to accomplish this.

20



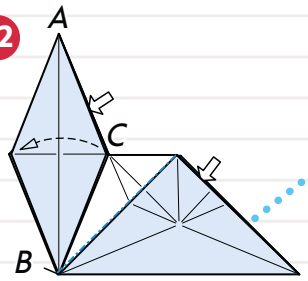
Valley fold. Repeat on the other side.

21



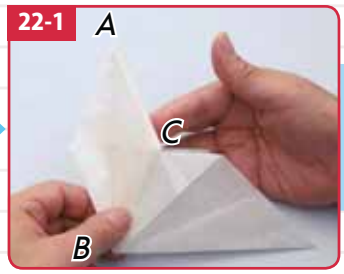
Swing over two flaps.

22



Squash fold triangle ABC behind, shifting the hidden flaps until the model becomes symmetrical.

22-1



Insert a finger and keep checking until all the sides have the same thickness.

22-2

The turning in progress.

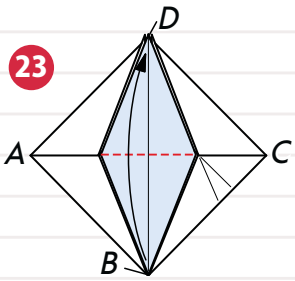
22-3

The structure after turning.

22-4

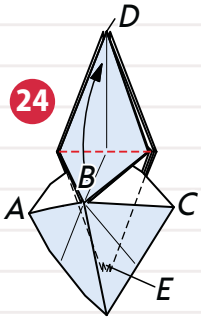
Turning complete.

23



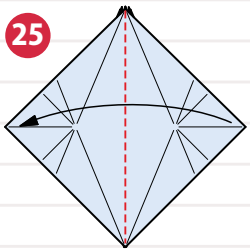
Only fold the overlapping triangle ABC. Make sure to place corner B onto corner D.

24



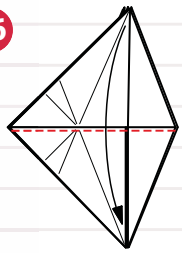
Step 23 in progress. Place corner B onto corner D. E should still point downward.

25

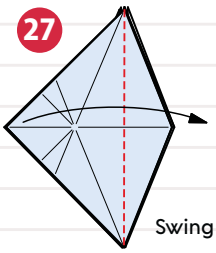


Swing over one flap.

26

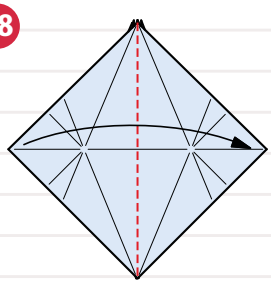


27



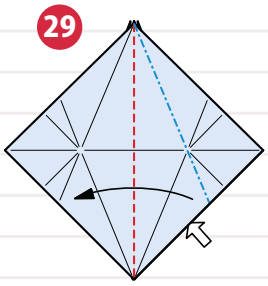
Swing over one flap.

28

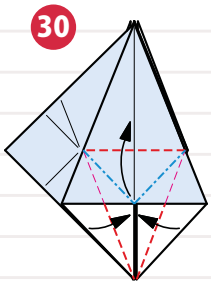


Repeat steps 25–27 on the other side.

29

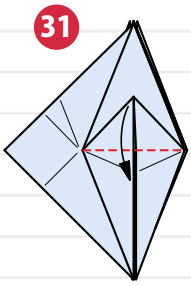


30



Petal fold (page 10).

31



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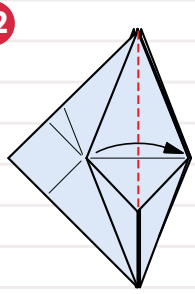
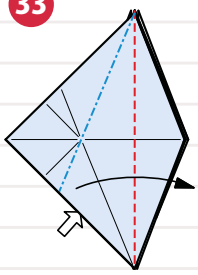


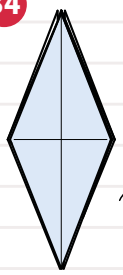
Swing over one flap.

33



Repeat steps 29–32 on the other side.

34



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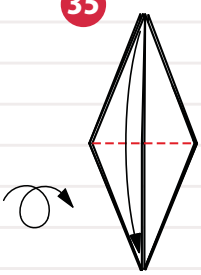
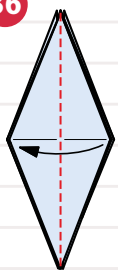


Fold the three other sections in the same way (11–34).

36

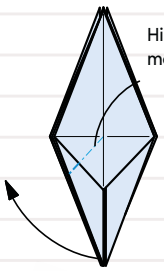


Swing over one flap.

End of the basic folds

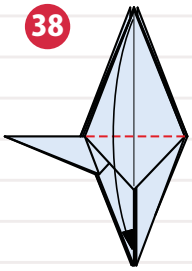
Start applying glue on all the back sides of the tentacles

37



Inside reverse fold the top flap.

38



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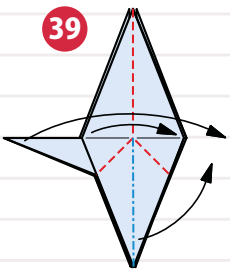
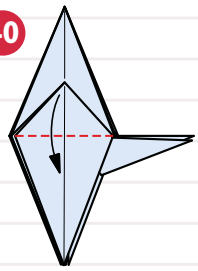


Fold over while reverse folding.

40



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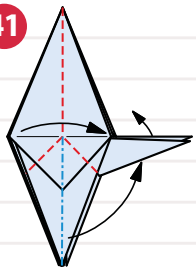
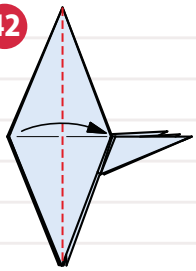


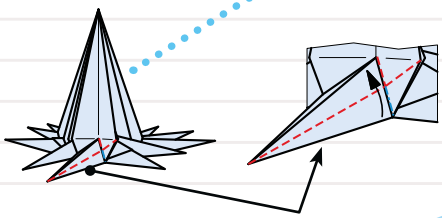
Fold over while reverse folding. Allow the flaps folded in steps 37 and 39 to swing behind.

42



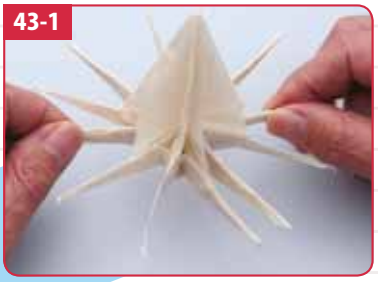
Fold the other flaps in the same way (36–41), and the overall shape should become three-dimensional.

43



Valley fold each of the tentacles to make them thinner.

43-1

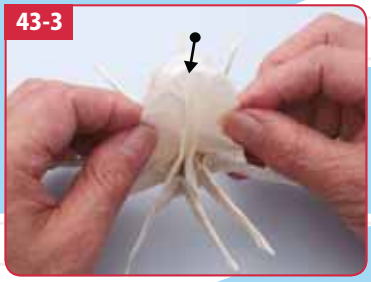


The structure after folding each of the tentacles.

43-2

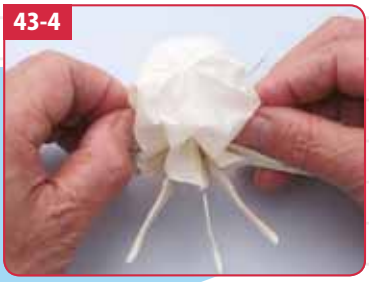
The structure 43-1 from the back side. The eight corners in the middle will also become tentacles.

43-3



Squash fold the vertex.

43-4

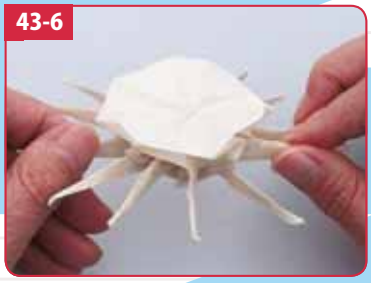


Squashing the vertex in progress.

43-5

The structure from above after squashing the vertex.

43-6



Side view of 43-5.

43-7

Reverse fold the twelve tentacles so that they form right angles.

43-8

Add wrinkles to the top of the bell to add realism.

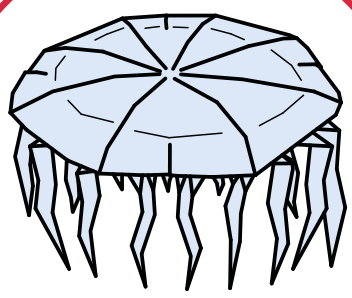
43-9

Thin the inner tentacles by folding.

43-10

Add cotton or tissue from the underside to achieve a full and solid shape.

44



Fine-tune the shape, and you're done.

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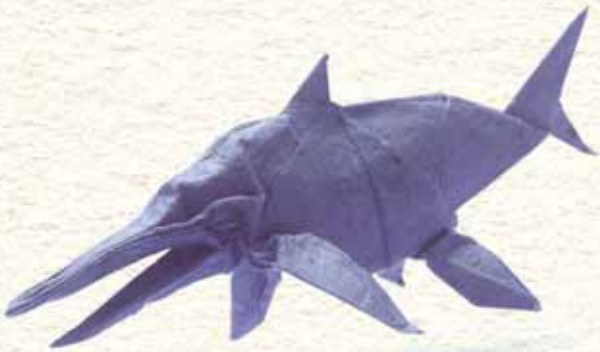
About the Author

Hisao Fukui was born in Shibuya Prefecture, Tokyo in 1951. He started creating origami models in 1971. His creations have been displayed at the Seibu Department store in the Shibuya, the PARCO store in Ikebukuro and other locations in Japan since 1974. He started focusing on new techniques to make more realistic three-dimensional origami some time around 1998. In 2002, he started holding monthly origami lessons at the Origami Center in Ochanomizu, Japan. In August, 2002, the Ochanomizu Origami Center held an origami exhibition of insects and dinosaurs, which would later be featured in the *Nihon Keizai* Newspaper. Hisao formed the Realistic Origami Association in September, 2002. In October, 2008, he received excellent reviews for his exhibition and work at Ebisu Garden Place. Hisao lives in Soka, Saitama where he also has an origami studio.

Ochanomizu Origami Center homepage:
www.origamikaikan.co.jp

HISAO FUKUI has been folding origami for nearly 50 years, and has been giving origami lessons in Tokyo for over 15 years. He specializes in magnificently realistic animal models that capture the quintessential expressive nature of each subject. He is the author of four origami books, including *Fantastic Origami Flying Creatures.*



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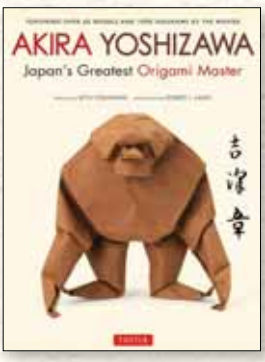

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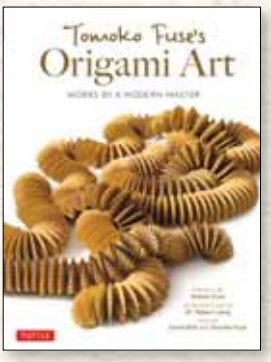

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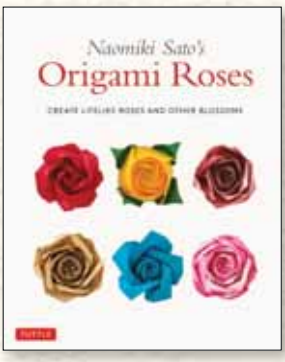

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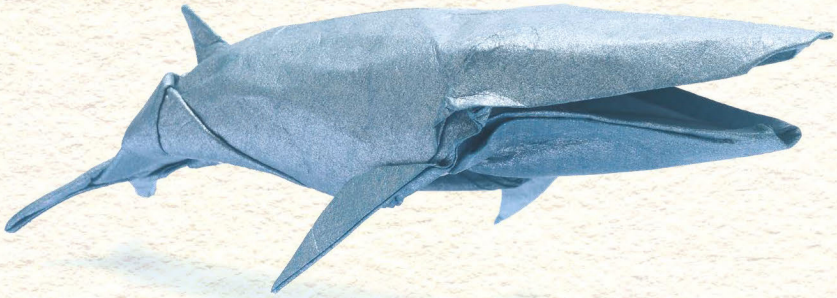

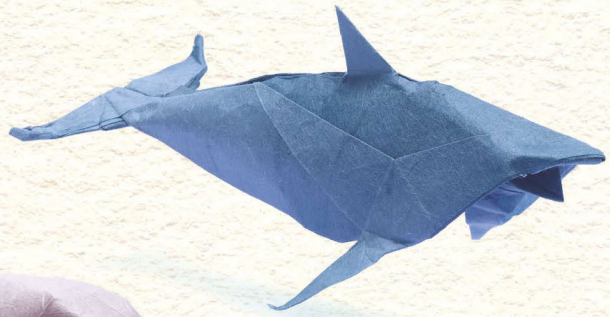

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